

## SEQUENCE LISTING

<110> Macina, Roberto A  
Nair, Manoj  
Chen, Seiyu

<120> Compositions and Methods Relating to Lung Specific Genes

<130> DEX-0214

<140>  
<141>

<150> 60/219,834  
<151> 2000-07-21

<160> 56

<170> PatentIn Ver. 2.1

<210> 1  
<211> 1449  
<212> DNA  
<213> Homo sapiens

<400> 1  
ctgggagtgg atttcataca ttcgtggagg tggtgagagg atataactacg cagactctgt 60  
gaggggccga ttccaccgtct ccagggacaa cgccaagaac tcactctatc tgcaaatgaa 120  
cagcctgaga gccgaggaca cggctgttta tttctgtgcg agagagccac cagcacccaa 180  
ttactttgac tgctggagcc agggaaaccct ggtcaccgct tcctcagctt ccaccaaggg 240  
ccccatcggtc ttccccctgg cgccctgctc caggagcacc tctggggca cagcggccct 300  
gggctgcctg gtcaaggact acttcccccga accggtgacg gtgtcgtgga actcaggcgc 360  
cctgaccagc ggcgtgcaca ccttccccggc tgtcctacag tcctcaggac tctactccct 420  
cagcagcgtg gtgaccgtgc cctccagcag cttgggcacc cagacctaca cctgcaacgt 480  
gaatcacaag cccagcaaca ccaaggtgga caagagagtt gagctcaaaa ccccacttgg 540  
tgacacaact cacacatgcc cacggtgccc agagccaaa tcttgtgaca cacctccccc 600  
atgcccacgg tgcccagagc ccaaatctt tgacacaccc ccccatgcc cacggtgcgg 660  
agcacctgaa ctccctggag gaccgtcagt cttcctctt ccccaaaaac ccaaggatac 720  
ccttatgatt tcccggaccc ctgaggtcac gtgcgtgtg gtggacgtga gccacgaaga 780  
ccccgaggtc cagttcaagt ggtacgtgga cggcgtggag gtgcataatg ccaagacaaa 840  
gccgcggggag gacgcgttca acagcacgtt cggcgtgtc agcgtcctca cggcgtcgtca 900  
ccaggactgg ctgaacggca aggagtacaa gtgcaggtc tccaaacaaag ccctcccgac 960  
ccccatcgag aaaaccatct ccaaaaccaa aggacagccc cgagaaccac aggtgtacac 1020  
cctgccccca tcccgggagg agatgaccaa gaaccaggtc agcctgaccc gcctggtcaa 1080  
aggcttctac cccagcgaca tcgcccgtgga gtgggagagc agcgggcagc cggagaacaa 1140  
ctacaacacc acgcctccca tgctggactc cgacggctcc ttcttcctct acagcaagct 1200  
caccgtggac aagagcaggt ggcagcaggg gaacatctt tcacgtctccg tgatgcatga 1260  
ggctctgcac aaccgcttca cgcagaagag cctctccctg tctccggta aatgagtgcg 1320  
acggccggca agccccccgt ccccggtcgc tcgggggtcgc gcgaggatgc ttggcacgta 1380  
ccccgtgtac atacttcccg ggcacccagc atggaaataa agcacccagc gctgcccctgg 1440  
gccccctgcg 1449

<210> 2  
<211> 3825  
<212> DNA  
<213> Homo sapiens

<220>  
 <221> unsure  
 <222> (428)

<220>  
 <221> unsure  
 <222> (430)

<220>  
 <221> unsure  
 <222> (1997)..(1998)

<400> 2

ttagtcacgt gaaaacccat cagggaaattt aacttgatga tagcaacatt cctcctccct 60  
 cttaaaaaac acgcccaccc tcaccaactt ttatcacaat agaatctact gcccgcaccaa 120  
 cagaaaaccc tactaagaac gagctttctc agtcccccaa aaaggacagt tatgttgaac 180  
 ccccaccaag aaggcccatg tcgcaaaaat ctgaaatca cagagcaaac acttccccctt 240  
 ctccacccag gagtcgctct gaacaacttg tcagactcaa agacaccact gcaaagttat 300  
 ccaaaggggc catcccatgt ccagcagcaa ccccggttcc aattgttagag aagaggtctg 360  
 aaatcatcat gtctccctgca acacccgtc gtcaaaattaa gatagaaact cgtggtaggg 420  
 actctccnan ctacaatcac aataccagta aatataaattc atgctgctag tggttcccttc 480  
 agagaatctg tggacgctca agaggaaatc aggaaaagtgg agaagagagc tacttatgtt 540  
 cataaaagatg gactaaattc cactgatcac atggtgcccc acactgaaag ttatgtgca 600  
 gttgaaatca tccgcaagggt tgcaatgcct cctcgccctgt cagagcacac acagagatat 660  
 gaagcggcca accgaactgt tcaaatggct gaaaatttcg tgaatgaccc tgaaaatgaa 720  
 ataaacagat ggttcaggga atttgagcat ggcccagttt ctgaaagcaaa gtc当地ataga 780  
 agagttatg caaagggaga aacaaaccat aacatacaac aagaaaagtgc tacattttgt 840  
 aaggaggaat ttggattaaac atcttttagga aacacgagtt ttacagactt ttcttgcaaa 900  
 catccttagag aactgcgaga aaagattcct gttaaagcagc ccaggatctg ctctgaaacc 960  
 aggtctctaa gtgaacattt ctcaggatcg gatgcattt agagtcaat tggttagtgc 1020  
 aagatgaaaaa cctcttcatc acatagctca gaagctggca aattctggctg tgacttcaag 1080  
 catgccccac caacctatga ggatgtcatt gctggacata ttttagatat ctctgattca 1140  
 cctaaagaag taagaaaaaaa tttcaaaaag acgtggcaag agagtggaaag agttttaaa 1200  
 ggcctggat atgcaaccgc agatgcttct gcaactgaga tgagaaccac cttccaagag 1260  
 gaatctgcat ttataagtga agctgctgct ccaagacaag gaaatatgtt tactttgtca 1320  
 aaagacagtt tatccaatgg agtgccttagt ggcagacaag cagaattttc ataagtcctg 1380  
 ctccgatgc caccattgca acagttaaact aagtttggaa aattatgcat cacttcatgg 1440  
 acaaataatac tgtaaacccctc actttaaaca actttcaaa tccaaaggaa attatgtga 1500  
 aggttttggaa cataagcagc ataaagatag atgaaactgc aaaaacccaa gcagatcagt 1560  
 ggactttatt cctaattgaa aacccaaatat gtgtaaaaat attgcagaaa acacccttgt 1620  
 acctggagat cgtaatgaaac atttagatgc tggtaacagt gaagggcaaa ggaatgattt 1680  
 gagaaaaatta ggggaaaggaa gaaaattttaa agtcatttgg cctccttcca aggagatccc 1740  
 taagaaaaacc ttacccttgg aggaagagct caaaatgagt aaacctaattt ggc当地acctga 1800  
 aatgacaacc ctgctatccc ctgaaattttaa aagtgaatct ctgctagaag atgttagaaac 1860  
 tccagaaaat aaaggacaaa gacaagatca ctttccattt ttgcagccctt atctacagtc 1920  
 caccatgtt tgc当地gaaag aggatgttat aggaatcaaa gaaatgaaaaa tgc当地tgaagg 1980  
 aagaaaaagat gaaaagnnnnng aaggaaggaa gaatgtgcaa gataggccga gt当地agctga 2040  
 agacacaaag agtaacacgaa aaagtgcattt ggtatcttaat gacaacaata atgtgattgt 2100  
 gcagagtgc gaaaaggaga aaaatgaaaaa aactaaccatc actaatggtg cagaagttt 2160  
 acaggttactt aacactgtatc atgagatgtat gccc当地aaat cataaagaaaa atttgaataa 2220  
 gaataataat aacaattatg tagcactctc atatctgaat aattgcaggc agaagacatc 2280  
 tatttttagaa ttcttgatc tattaccctt gtc当地gtgaa gcaaattgaca ctgcaatga 2340  
 atatgaaattt gagaagttttag aaaaatcatac tagaatctca gagttacttg gtatatttga 2400  
 atctgaaaag acttatttgc ggaatgtactt agcaatggct ctgaaagaaac agactgacag 2460  
 agcagctgc ggc当地ccctg tgc当地ccctgc tccaaaacca agcctcagcc agaggccctt 2520  
 tggtaaaggaa gggaaaggatc atcatctctc ctgatacaaa tctctttaac attaaaggaa 2580  
 gccattcaaa gagcaaaaat ttacactttt tctttctaa caccgtgaaa atcactgcat 2640  
 ttccaaagaa aatgagaac attttcaattt gtgatttaat agattctgtt gatcaaattt 2700  
 aaaatatgcc atgcttggat ttaaggaaat ttggaaagga tggatgtt 2760

aaacaacaga agctgccccg aataatgaaa acacagggtt tgatgctctg agccatgaat 2820  
 gtacagctaa gcctttgtt cccagagtgg aggtgcagtc agaacaactc acggtgaaag 2880  
 agcagattaa aagaaacagg tgctacagtg acactgagta aaatatctat ggccactgac 2940  
 agtccacact taggcactga gagatattga tggatgtaaa taagattttt tgaatttgg 3000  
 tacccttttgg aggaacttga tgtaaacatg gtgttcagaa atctcggttc tatctcaatg 3060  
 ggtatgtt tggatgttacac cttgtcattt ttttcacaat ttatttacat ctactttgt 3120  
 ttgaactgga atgaagagat gaaacactat ggatatgttt tccattcaaa tggcacttta 3180  
 gcatattgtt ctgttttcct gtaaaaacatc atgggtgtga tttttatact gctgctgctt 3240  
 gtcacaaatta ttataacttc tctgttaattt cctctgaaat aaaattgaat cacctgagg 3300  
 gcaaaccaaa atacttctgt aactttttt gatatatact gtcattctaa gtacatatac 3360  
 tccttgcac ttgggaagta tttgtcttga ggcaagtatt taccacccac actaaaaataa 3420  
 tgctgaaaaa aataaaataac taaactgaag gcacagtatt attagaaagt gtaacattt 3480  
 catttctct tttactccac attttaaaga tacgagggtt attgttctt aaataattac 3540  
 ctatattaaa ttatcataga atgtgtctat aaacatttga cgaaaaaatgt tgattttcct 3600  
 ccagaataat gtgaagtcca tactcagaaa ttaacttagaa aggtttttaga cattacttaa 3660  
 ataaattatt cacattgcac ttgtattgtc tgctctgtt aatggataag tataacaatc 3720  
 atatcaatc acgtttgtcag gttttttctt tatcatattt gatgaatatt aagttttct 3780  
 gttatgaaaaa catattccctc taaaatttgg cttctaaattt ttcta 3825

<210> 3  
 <211> 2315  
 <212> DNA  
 <213> Homo sapiens

<400> 3  
 gtaaggcagca gttgattaga attaaatgag cttgaatttg attctgacat tcatattgtat 60  
 ttgtccttcc ctcaaaaaac accctgagta tggacagggc ttcccgactc tgcagactac 120  
 acggccgtcca tgagcagtgc ccaggtgtca ttacctgccc atgagatgtg acctggcag 180  
 gggtccccac ctgtaccctt gggcccccagg agggaaagccc agcatgtcag gctgaagcgg 240  
 gggtgcttcc agagatggcc atgcagagca gccctccgc ctcgggtcctt gaggccccgc 300  
 tcagtggtcc ccccactctg cagaatgtgc acccccagct ctgatgtctc ttccaggtga 360  
 aatccgggtc cccggccgtg ctggcattcg caaaggagaa gtcttttggg tggcccgact 420  
 tcatacatac cacggtcggc gtctcgacc cccggctgg cagccaaaggg cctctgtcca 480  
 ctaccctgac cttctccacg cccgtgacca accaaggccat tggccatccca gtgacagtgg 540  
 cttttgtat ggtatcgccgt gggccgggtc cttatggagc cagcctcttc cagcacttcc 600  
 tggatctta ccaaggcatg ttcttcacgc ttccgcctt gtgggttggg acagcggtca 660  
 tgatcatagc ctaccacact gtctgcacgc cccggatct tgcgtgtcct gcagccctca 720  
 cgcctcgagc cagccctggg acacagcccc cactatttcg ctgcctcattt acccacatct 780  
 cccaatgcac tgcctcttc tgcacaaagcc agccctccctt cagggctgtg gagcccgagg 840  
 ctatggctc ccaactggc cgcgtgaagg ttcccgagg atgggtctc agccgagcct 900  
 cgttgcaacc cccaagatgg aacatccctt gctgcattca cactggaaaca agccctcca 960  
 gatgagtgcc cccggcccccag gccagcttca ctgcgttc ttcacacaga gctgtagttt 1020  
 cggctctgcc cattagctca ttttatgttag gagttttaaa tggatgtttt ttcccttca 1080  
 agtcttacaa agctaagact ttttgctca ttccctttt catgggttgc tagggttct 1140  
 ggacaatgtg ctgtgcatt tttatttcc tagccttgct aaaatcttc cttctcaag 1200  
 actttgagca gttagaagtg ctcttttagaa gttgtctgt ggtgatgtt ctgttagtgg 1260  
 ctcaggaaa ggattgtcca gttacttttag ggggttttgg gttgggtttt tccctctgt 1320  
 aaaacttact ttggcccttag tctggctgtc gctaggactt ctgaggagca atggacatg 1380  
 agtgcctcg tatctgcgcc actgcccac gggaaaggctc agaaccaggc acctggaggc 1440  
 caggatagcc aagccctggg tgagcggag gctggagaac acaggagctc acccaggcct 1500  
 gctgccaac catggccac tggatgtaaa ctgcgttc tctttttgtt ttcataagcc 1560  
 gttgagacat ctgtggact tggcttaggc cctgctggg catccccacgt gtgatccctt 1620  
 tcactccatc aggacaccag gactgtcattt aggaaaatgt ccttgagatg gcagcaggag 1680  
 tcatattttc tggatgtgtt tttcgaaag cccgtgttc ctgcctcagc acaaagaccc 1740  
 agtgcattt gtcctcttc ttcctgtgcc actccagaac ctcagcagat ctgagccacc 1800  
 gcctgcccgt gttggaggcg gccactttca tggcagctca tcaggcgcag gggcccgac 1860  
 agcttcccag caggcccttag agcccgccctt gggccaatga tggagggcgg cccgcagccc 1920  
 agggccctgcc catccagaag ggactccccca gggcctgggg gaggagaccc ttggaaaagt 1980

```

cctctttcc cagcttcgtt ttctggatct gagattctca gatcacaggc ccctgtgctc 2040
caggccgagg ctgggttacc ctcaggaga tccagagact catgccatg gccatccatg 2100
cgtggacgct gtgtggagag tccaggatga cgggatcccc cacaagctcc cttcagtcct 2160
tcagggttgg gcgttgttgg tgattttct aaagctggag aaaggaagaa ttgtgccttg 2220
catattactt gagcttaaac tgacaacctg gatgtaaaata ggagccttcc tactggttt 2280
ttaataaaag ttctatgtga tttttaaaaa aaaaaa 2315

```

<210> 4  
<211> 300  
<212> DNA  
<213> *Homo sapiens*

<220>  
<221> unsure  
<222> (8)

```
<400> 4
acgatganaa aggtgaaggc tgccgggtggc acggggctcg gatctgctgc cggggccgacc 60
tgggagagcc atgaggctgt atgtgatggg gcacaccttg ggtgcacact ttggatgaca 120
agtccccca agaggagcca gggctggctg cagtgaggcc ccaggaggtt ctccaggggc 180
gtcctgcttc agctcaaggg gcttaggaata ggggaaacgta tgcagggaaag ccaatggccc 240
aaatggctcc ctcaactqact qttacttqct qtqtatgtct ctttcttttc ttttttttcc 300
```

```
<210> 5
<211> 4347
<212> DNA
<213> Homo sapiens
```

<400> 5  
gcgggtgcggc ggccgggaggc ggaggcgagg gtgcgatggc gcccggcccg ggacgcgcgt 60  
acgcctcgct gcttctcctg atctgcttta acgttggaaag tggacttcac ttacaggct 120  
taagcacaag aaatgaaaat aagctgcttc ctaaacatcc tcatttagtg cggcaaaagc 180  
gcgcctggat caccggcccc gtggctcttc gggagggaga ggatctgtcc aagaagaatc 240  
caattgccaa gatacattct gatcttgcag aagaaagagg actcaaaatt acttacaaat 300  
acactgaaaa agggattaca gagccacctt ttggtatatt tgtcttaac aaagatactg 360  
gagaactgaa tgttaccagc attcttgatc gagaagaaac accattttt ctgctaacad 420  
gttacgctt ggatgcaaga gggaaacaatg tagagaaacc cttagagcta cgcatthaagg 480  
ttcttgatata caatgacaac gaaccagtgt tcacacagga tgtcttgg 540  
aagagtttag tgcagcacat actcttgtga tgaaaatcaa tgcaacagat gcagatgagc 600  
ccaataccct gaattcgaaa atttctata gaatcgatc tctggagcct gcttattcctc 660  
cagtgttcta cctaaataaa gatacaggag agatttatac aaccagtgtt accttggaca 720  
gagaggaaca cagcagctac actttgacag tagaagcaag agatggcaat ggagaagtt 780  
cagacaaacc tgaaaacaaa gctcaagttc agattcgat tttggatgtc aatgacaata 840  
tacctgttagt agaaaataaa gtgcttgaag ggtatggttga agaaaatcaa gtcaacgtag 900  
aagttacgcg cataaaagtg ttcgatgcag atgaaatagg ttctgataat tggctggcaa 960  
attttacatt tgcatcagga aatgaaggag gttatttcca catagaaaca gatgctcaaa 1020  
ctaacgaagg aatttgtgacc cttattaagg aagtagatta tgaagaaatg aagaatctt 1080  
acttcagtgt tattgtcgtc aataaaagcg ctttcacaa gtcgatttagg agtaaataca 1140  
agcctacacc cattcccatc aaggtcaaaag tgaaaaatgt gaaaagaaggc attcatttt 1200  
aaagcagcgt catctcaatt tatgttagcg agagcatgga tagatcaagg aaaggccaaa 1260  
taattggaaa ttttcaagct tttgatgagg acactggact accagcccat gcaagatatg 1320  
taaaattaga agatagagat aattggatct ctgtggatt tgcacatct gaaattaaac 1380  
ttgcaaaaact tcctgatttt gaatcttagat atgttcaaaa tggcacatac actgtaaaga 1440  
tttgtggccat atcagaagat tatcttagaa aaaccatcac tggcacagtc cttatcaatg 1500  
ttgaagacat caacgacaaac tgtcccacac tgatagagcc tgcagacatac atctgtcact 1560  
atgcagagta tgtgaatgtt actgcagagg acctggatgg acacccaaac agtggccctt 1620  
tcagttctc cgtcattqac aaaccacctq gcatggcaga aaaatggaaa atagcacgccc 1680

aagaaaagtac cagtgtgctg ctgcaacaaa gtgagaaaaaa gcttgggaga agtgaardtc 1740  
 agttcctgat ttcagacaat cagggttta gttgtcctga aaagcaggc cttacactca 1800  
 cagtttgta gtgtctgcat ggcagcggct gcaggaaagc acagcatgac tcctatgtgg 1860  
 gcctgggacc cgcagcaatt gcgcctatga tttggccctt tctgctcctg ctattgtac 1920  
 cactttact gctgatgtgc cattgcggaa agggcgccaa aggcttacc cccataacctg 1980  
 gcaccataga gatgctgcat ccttggata atgaaggagc accacctgaa gacaagggtgg 2040  
 tgccatcatt tctgccagtg gatcaagggg gcagtctagt aggaagaaat ggagtaggag 2100  
 gtatggccaa ggaagccacg atgaaaggaa gtagctctgc ttccattgtc aaaggcAAC 2160  
 atgagatgtc cgagatggat ggaagggtgg aagaacacag aagcctgctt tctggtagag 2220  
 ctaccagtt tacagggccc acaggcgcta tcatgaccac tgaaaaccacg aagaccgcaa 2280  
 gggccacagg gccttccaga gacatggccg gagctcaggc agctgctgtt gcactgaacg 2340  
 aagaattctt aagaatttat ttcactgata aagcggccctc ttacactgag gaagatgaaa 2400  
 atcacacagc caaagattgc cttctggttt attctcagga agaaaactgaa tcgctgaatg 2460  
 ctcttattgg ttgttgcagt tttattgaag gagagctaga tgaccgcttc ttagatgatt 2520  
 tgggacttaa attcaagaca cttagtgaag tttgcctggg tcaaaaaata gatataaata 2580  
 agggaaattga gcagagacaa aaacctgcca cagaaacaag tatgaacaca gcttcacatt 2640  
 cactctgtga gcaaactatg gttatttcag agaataccta ctccctctggc agtagcttcc 2700  
 cagttccaaa atctttgcaaa gaagccaatg cagagaaagt aactcaggaa atagtcactg 2760  
 aaagatctgt gtcttctagg caggcgccaa aggtagctac acctcttcct gacccaatgg 2820  
 ctcttagaaa tgtgatagca acagaaactt cctatgtcac agggtccact atgccaccaa 2880  
 ccactgtgat cttgggtctt agccagccac agagccttat tttgacagag aggggtgtatg 2940  
 ctccagcttc taccttggta gatcagcctt atgctaattga aggtacagt gtggtcactg 3000  
 aaagagtaat acagcctcat ggggggtggat cgaatccctt ggaaggcact cagcatcttc 3060  
 aagatgtacc ttacgtcatg gtgagggaaa gagagagctt ctttgccttcc agctcagggt 3120  
 tgcagcctac tctggccatg cctaatatag ctagaggaca gaatgtgaca gtgacagaaa 3180  
 gagttcttagc acctgtttcc actctgcaat ccagttacca gattccact gaaaattcta 3240  
 tgacgcttagt gaacaccacg gtgtctggag ctggagttccc tggccctctg ccagattttg 3300  
 gtttagagga atctggtcat tctaattcta ccataaccac atcttccacc agagtcacca 3360  
 agcatagcac tgtacagcat tcttactcct aaacagcagt cagccacaaa ctgacccaga 3420  
 gtttaattag cagtactaa ttcatgttt ccaatgtacc tgattttca tgagccttac 3480  
 agacacacag agacacatac acattgtatc taaaattttt ctcagtcact gatatgaaa 3540  
 ggaccacact gtctctgctt ccaggagtt tttagaaatg ttccacaatt tactgaagac 3600  
 atagagatga tgctgtgt taggtgcctt ttagcaagct atgcaaacaa tcctgataaa 3660  
 acaagataca tagagagtca atctggcttc tgagaattta ccaagtgaac agagtaccta 3720  
 gttcatcagc cgtccagtaa agcaacccag gaaactgact gggctcttt gcctaccgta 3780  
 ttaacattaa acattgtatc tctgtattct gtactttact gcacccagca gacttcaac 3840  
 aactcattga cccaaagtgc tgggattaca ggcgtgagcc actgcgcccc gccacattca 3900  
 gttcttatca aagaaataac ccagacttaa tcttgaatga tacgattatg cccaatatta 3960  
 agtaaaaaat ataagaaaaag gttatcttaa atagatctta ggcääatac cagctgatga 4020  
 aggcacatcga tgccttcatt tggcgtca tctccaaaaa cagtaaaaat aaccactttt 4080  
 tggcgtcaaa tatgaaattt taaaaggagt agaataccaa atgatagaaa cagactgcct 4140  
 gaatttgagaa ttttgatttc taaaagtgtg tttcttctt aattgtgtt ccttaatttg 4200  
 attaatttaa ttcatgtatt atgattaaat ctgaggcaga tgagcttaca agtattgaaa 4260  
 taattactaa ttaatcacaat atgtgaagtt atgcatgatg taaaaatac aaacattcta 4320  
 attaaaggct ttgcaacaca aaaaaaaaaa 4347

<210> 6  
 <211> 2116  
 <212> DNA  
 <213> Homo sapiens

<400> 6  
 tagcgaccc tcgcaggaa agtcagcgtc ggccaaaagc ctccgggatc ggaatgagga 60  
 ggctgctgga gaagttgtt tctcctaaaa gggattatcc caggcgccaca cggcttattac 120  
 acgccccggaa cgctcagtcg gtgcgggtac ccctggcag gggccagcccc gcattccagg 180  
 ttctccatgt gcctagaaga cagtaatcga cggatagca acagatctga ctgctaacat 240  
 gcgaaaccga tcagtagtag cagtagcacc agcaacacgca gcacgaaaag caaaactaat 300  
 ctaaacggcc ctcagggtct aagcaggccc gacgaagact cgcccatccg gtcgcccagaa 360

aactggggagt	cccgccccgc	tttccggcac	tgaaaacgcg	tcggccc	ctgggtaccgc	420
atcctcctct	tgacccccacc	tacactacga	cgacggagc	tcgagaacgc	ggcaccgc	480
cccgaggaa	gtgcttccct	gggcgaaagc	ttctgagcgt	gatatacg	aagtgc	540
tcttcggtc	tttctggct	cggcccgaga	agcgagatga	cgaaggaa	gtcatcg	600
ggaaaagcg	tc gcaataagac	gcacacgtt	tgccgccc	gtggctctaa	ggcctaccac	660
cttcagaagt	cgacctgtgg	caa atgtggc	taccctgcca	agcgc	aaagtataac	720
tggagtgcc	aggctaaaag	acgaaatacc	accggaaact	gtcgaaatg	gcaccta	780
attgtatacc	gcagattcag	gcatggatt	cgtgaaggaa	caacaccta	acccaagagg	840
gcagctgtt	cagcatccag	ttcatactt	aatgtcaac	gattagtcat	gcaataaaat	900
ttctggttt	aaaaaataca	tatctggtt	ttgtaaggta	tttttaatca	attaggctt	960
tagtatcgt	gaaatactgt	aggtttaggg	actgggct	cttcatatca	gatttactt	1020
ttaagtgact	gttttggaa	gtttaacttt	ggactgggtt	tgtaaacacgg	ttaaaggcaa	1080
tgagaaaaca	gcagaattcc	aggagtc	gaagcagagg	gcactggaa	acaatata	1140
agattaaaat	agcacagctc	atgtggcata	ggtgggtatt	ttagatgtt	gagtaaattt	1200
gaaagagtat	gatgtttaaa	ttacctttag	caacatgtt	atctgtat	ctgtcatg	1260
taggggatg	attattagtc	acatagagct	tgggagtacc	actggaaacg	tatgggtagg	1320
agtttaggt	gcttctgtt	ttcaaaagat	gatcttata	tagtatct	aatgctact	1380
tggcacac	ctacttgtgg	ctgtgtgt	ggtggct	taagtgaaa	aagcctgct	1440
ggtgtgag	taacttaagaa	tatgtaaata	ggttgagaa	aaagttaggg	ttgggtgca	1500
gtaaagatt	agcaggaaat	aaaggaaaat	caagtataat	ccctgagatt	tgttagatt	1560
aggcaatgat	gtgggactac	ttggcgaat	tttttagcc	ctcaacttgg	taattgggt	1620
tttctgtgtt	aaagcactga	aacttgcgt	cgtgccttcc	tagtttcgt	ggtttattg	1680
cagggttgg	ggttttttt	gttttttaa	aatgaaggaa	caaagtcaac	tggactgct	1740
agtgagaggg	caggggcagt	tgaaggaaac	atgaattgt	ggaacagcta	cataaaatag	1800
tgatgtagcc	aagtcatgct	attnaaatta	taattctcca	ctgtgtttag	aataacatct	1860
gaggttctt	acctggcctt	ggaagggtat	cactttact	tgtaaacctgg	aatggctt	1920
taatgtgct	gctaattgct	actctcatct	tgtatttaa	ctcctaattt	acccttcagg	1980
tctcagctt	agaacattca	tttataaaaga	aaccctgt	attaaaatct	tcttgggctt	2040
cctcccgaaa	tgtgagacta	tactttaaag	atgtatgg	agagtccaa	tgccattg	2100
tttcttggttt	acagat					2116

```
<210> 7  
<211> 4474  
<212> DNA  
<213> Homo sapiens
```

<220>  
<221> unsure  
<222> (9)

```

<400> 7
cggcccggnnc gggggggcaaa gatggcgccg gcagtagggg ttcgtggccg gtacgagctg 60
ccgccttgct cggccccagg ctggcttcctc agccttccg cttgtcttag tggtggccgca 120
cgaggggcct tcgccaccac gcactgggtc gtcacggagg acggaaaat ccagcagcag 180
gtggattcac caatgaacctt gaagcatcct catgacctag tcataattaat gagacaagaa 240
gcaacagttt actacctcaa agaatttagag aaacaattag ttgctaaaaa aattcacata 300
gaagagaatg aggacagaga cacaggactg gaacagagac ataataaaga agacccagac 360
tgcataaaag ccaagggtgcc cttaggggac ctggatctt atgatggcac atacataact 420
ttggagagca aagacatcaag tcctgaagat tatatagaca cagaatctcc tgccctcca 480
gacccagagc aacctgattt tactaaaatt ctagaacttc catatagtat acatgcttt 540
cagcacttga gaggtgtaca ggagagagtt aatctttctg cacctctgct acctaaagaa 600
gacccaatct tcacatattt atctaaacgg ttaggaagga gtatagatga cataggtcac 660
ctcattcatg aaggccctaca gaagaacact tcctcggtt tactgtataa catggctca 720
ttttactgga gaattaagaa tgagccatat caggttagtag aatgtgccat gcgagcactt 780
cacttcctt ccaggccacaa taaagacatt gccctggtca acctggcaaa cgttctacac 840
agagcacact tctctgctga tgctgctgtc gtggtccatg cagctctgga tgacagtgac 900
ttcttcacca gctattacac ttggggaaat atatatgcaaa tgcttgggaa atataaccac 960
tcaqtqctct gttatgacca cgcttgcag gccagacccgt ggttttagca agctataaaag 1020

```

aggaagcatg ctgtcctatg tcagcaaaaa ctggaggcaga aattggaggc tcagcataga 1080  
 tctccacgc gaacactgaa tgagttaaaa gagtatcaa agcagcatga ccactacctg 1140  
 agacagcagg aaatcctaga aaaacataaa ctgattcagg aggagcaa at cttaaaat 1200  
 atcattcatg agactcgat ggcaaaaagag gcacaattag gaaatcatca gatatgccga 1260  
 ctggtcaacc agcagcatag tttacattgc cagtgggacc agctgtacg ctatcatcgt 1320  
 ggagatatct ttgaaaatgt ggactatgtt cagtttggtg aggattcatc aacctccagt 1380  
 atgatgtctg tgaactttga tgtaatca aatcagatg atatcaatga ttcggtaag 1440  
 tcttccccg tagccattc tatttctgg atttgggca gggactctga tgcataatagg 1500  
 gacaaacagc atattctatg gcctaaaaga gcagattgta cagaaagcta ccctagagtc 1560  
 cctgttggtg gggaaatgcc aacgtatccc ctgcctccgg aaaacaaaagg actcaggatc 1620  
 cacgaactca gcagtatgta ttatttctaca gaagaagagg cccaaacccc tgactgttcc 1680  
 ataactgact tcagaaaaag ccacactctg tcctacttag tcaaaagaatt agaggttcgc 1740  
 atggatctga aagccaaaat gccagatgac catgcacgaa aaattttgct ttcccgat 1800  
 aataactata ctatcccaga agaagaaatt gggctttct tatttcatgc tattaataag 1860  
 ccaaatgctc ctatctggct catactcaat gaagctggac tataactggag agcagtagga 1920  
 aatagcaact ttgttattgc ctgttccatg agggcttga atttagctcc acttcaatac 1980  
 caagatgttc ctcttgc当地 cttggccaaat cttttgatcc attacggcct tcattttgat 2040  
 gccaactaagg tgctacttca agctttggcc atcaatagct ctgagcctct gaccttttgc 2100  
 agcctggaa atgcttaccc tgcttgc当地 aatatcagtg gggcaattga ggcctttaga 2160  
 caggccttga aattaaccac caaatgttca gagtgtgaaa acagcctgaa gttgatccgc 2220  
 tgtatgcagt ttatcctt tctgtacaac atcacttctt ctgtttgc当地 tggtacgggt 2280  
 gttgaggaga gcaatgggatc tgatgagat gagaatttgc当地 atgaaaccaa aatgtcagaa 2340  
 gaaatactgg ctgggttggatc tgaatttcaat caggcatggc ctggggggg 2400  
 gcaactagaga tggaaaggccg ggcgtttagac ttacaaggaa tacgggtgct gaagaaagg 2460  
 ccccaggatg ggtggccag aagcttgc当地 tatggagact gcagaagtga agatgatgaa 2520  
 gcaacagaat ggattacatt ccagtc当地 cgtgtaaaga aacccaaagg agatcataag 2580  
 aaaactcctg gggaaaatg agaaacaggat cagatagaaa atggacatcg ttaccaagca 2640  
 aacctagaga tcactggccc caagttggca tctcctggc当地 cacaaggaaa aaaacgtgac 2700  
 taccagcgtc tggatggcc cagccggac gaatgc当地 aactccgctg ggttagagctg 2760  
 actgccccatcg tgagtacccg gcttgc当地 tcttcaaaaaa acattgacat cacagaacac 2820  
 atagatttttgc ccacccctat acagcagcc gcaatggagc ctctttgcaat tggcaatctc 2880  
 cccacagata tgcataccct ggaccacttgc当地 catggggttt ccaaccggc当地 cagcctgc当地 2940  
 tacacagggg agagtcaggta aacagaggta ttacaaaatc tcggcaaaga ccaatatcca 3000  
 caacagtgc当地 ttgaacagat tggcacccgat gcaatggagc ctctttgcaat tggcaatctc 3060  
 tcctgggtcc tctccagcat ggcagccctc gcaatggacttgc当地 ggtatgtccc 3120  
 gcaatcgact gcctccggcc ggcttgc当地 tatgc当地 accagatgaa ggtatgtccc 3180  
 ctgattagcc tggccaaatcttgc当地 gcaagacttgc当地 ggaatgacgc当地 cgtcatagta 3240  
 gcccaccatgg cagtagagat cgc当地 ctttgc当地 ttttgc当地 accacttccat tctggcaat 3300  
 gtctacgtgg caatggagaat tttggaaaatg gcaactgggtt ggtatgaatc cacattgaag 3360  
 cttcagcccg agtttgc当地 agccaaagaaatg cgaatccagaat ccatccagtg tcacttaatg 3420  
 ctgaagaagg gacggcgctc tcttgc当地 acttcttctt tctcttccat tctttactca 3480  
 tgctctaaaaaaa aaaaagaaata agaaaagaaaatg ccaatcatttgc当地 tcaatcatttgc当地 3540  
 tgggtgtgaa aataactaag acttataaca ggacttttac atatgtggatc attggggatc 3600  
 ttttggggatc acgtttctcc tttccccc当地 ccaacccatcg aagaggcacc ttcagaaaca 3660  
 cacatttttcaaaaaggaaata tgcaatgc当地 agatatttgc当地 taaataactga gccaagacat 3720  
 ttctggagct gtgttgc当地 tccaaaaacc tcaatgc当地 tagggctttt ctcagtg 3780  
 cagcttagcc tctcttgc当地 ggaggatgaa gccgatttgc当地 acatttcttgc当地 3840  
 tagcctctgt tgc当地 aatgc当地 ggaaatgc当地 cccatcttgc当地 gcccgtc当地 3900  
 gttctgc当地 ctctccggta gacccatgc当地 ctgtccccatgc当地 tcttgc当地 tccatgc当地 3960  
 tgggttacca acttctcgat gtagtttgc当地 ggggggggatgc当地 gggatatgc当地 4020  
 aaaatatttcaacaacaaa aatttcttgc当地 atcaccttgc当地 ctttgc当地 tttttatgc当地 4080  
 tggggggggatgc当地 gggggggatgc当地 gaagggggatgc当地 tcagc当地 gcaatcatttgc当地 4140  
 actttaatcaaaatcacaat gggaaaccat aagttgaaat cctatataac aggttataatgc当地 4200  
 atatagaata tgatatttgc当地 aagcccttca cagactgatgc当地 ctatgttttca 4260  
 gttcactgtg ttaccatgc当地 tgtaatgc当地 agctcccttgc当地 ctctgaggcc 4320  
 tccagactta gtc当地 ctccaggatgc当地 agggatgc当地 gcaaggatgc当地 agtgc当地 ttttgc当地 4380  
 ttacccatgc当地 tcccccaggatgc当地 atcagaaacttgc当地 ccaacatttttgc当地 ggaatcttca 4440  
 ctgagaaaaaaatcacaat gtttatgc当地 aaaaatgc当地 4474

<210> 8  
<211> 777  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> (269) .. (439)

<220>  
<221> unsure  
<222> (715) .. (716)

<220>  
<221> unsure  
<222> (743)

<220>  
<221> unsure  
<222> (750)

<220>  
<221> unsure  
<222> (753)

<400> 8  
aaataaataa ataaaattta gattaatttgc tgtttatatt tttatataaa ctatgacata 60  
agtataaaca aaaaaataga ataagtaaat aaataaataa aatttagatt aatttgctgt 120  
tacattttta tataagctat gtttatgaca gactttctta taatattctt atcataatgt 180  
tcttgactt gaaagaatgt gcattctgca gttgtgtgca ggtgttatgt gtatttcaac 240  
tgggtcaagt ttgttaatca ggttggtcnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn 300  
nnnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn 360  
nnnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn nnnnnnnnnnn 420  
nnnnnnnnnnnn nnnnnnnnnnnn cgttttctgg tagagtgaac cctttattat gtgaardggc 480  
tttctctacc actcacagtg gtatttttt cactttcccc cttattttg aatttcagt 540  
gttctataa tgatgtcatg tctttgaat agagttgttt taatcaagtc tgtcaatttt 600  
tgtctttgt gtatttcggt aatttacatt tatttgaatt actgatatacg ttgtgttcat 660  
aaataccatc ttactatttgc ttcccatattt gtcttaccca tttttgtttt tattnnttc 720  
ttttctgttg ctttccttt ccngattaan ttnttaattc ccgtttccc cccctta 777

<210> 9  
<211> 3195  
<212> DNA  
<213> Homo sapiens

<400> 9  
ctctctttta gtgtcactgt caatggcgct acatggactt tggtaataaacc ctttgaggca 60  
catagctggg tgccatgttag aacatgtatc tggtacgata agtgtgtgcc caagaatca 120  
gaagaatgg a ctttaatctc attttagaaa gtatgatatt aaatgattta cccaaagccat 180  
acttcagggtt aatgacacgca tagaagctag tacctgtgtc tctcaaattt ttctaacact 240  
ttttatcttc ccatcagggtt tggtcagggg aaactcagtg gagaggaaga tatataatccc 300  
cttaaataaa acagctccct gtgttcgcct gctcaacgcc actcatcaga ttggctgcca 360  
gtcttcattt aatggagaca cagggttat ccacgttaga gagaagagg aggacctaca 420  
gtgggttattt aatgatggcc ccaacccccc ttacatgggtt ctgtggaga gcaagcattt 480  
taccaggat ttaatggaga agctgaaagg gagaaccagc cgaattgtctg gtcttgca 540  
gtccttgacc aagcccagtc ctgcctcagg cttcttcattt aatgtacagt gccaatga 600  
tgggttgggtt gtttactcca attcctatgg gccagagttt gctcaactgca gagaataca 660

gtggaaattcg ctgggcataatg gtttggctta tgaagacttt agttccccca tctttcttct 720  
 tgaagatgaa aatgaaaacca aagtcatcaa gcagtgttat caagatcaca acctgagtca 780  
 gaatggctca gcaccaaccc tcccactatg tgccatgcag ctctttcac acatgcac 840  
 tgtcatcagc actgccacct gcatgcggcg cagctccatc caaagcacct tcagcatcaa 900  
 cccagaaaatc gtctgtgacc ccctgtctga ttacaatgtg tggagcatgc taaaggctat 960  
 aaatacaact gggacattaa agcctgacga cagggttgg tggctgcca cccggctgga 1020  
 tagtcgttcc ttttctgaa atgtggccc aggggctgaa agcgcagtgg cttcctttgt 1080  
 cacccagctg gctgctgtc aagcttgca aaaggcacct gatgtgacca ccctgccccg 1140  
 caatgtcatg tttgtcttct ttcaagggga aacttttgc tacattggca gctcgaggat 1200  
 ggtctacgt atggagaagg gcaagttcc cgtgcagttt gagaatgtt actcatttgt 1260  
 ggagctggga caggtggcct taagaacttc attagagtt tggatgcaca cagatcctgt 1320  
 ttctcagaaa aatgagtctg tacgaaacca ggtggaggat ctccctggcca cattggagaa 1380  
 gagttggtgc ggtgtccctc ctgtcatctc caggaggcca aatcagtccc agcctctccc 1440  
 accatcttcc ctgcagcgt ttcttcgagc tcgaaacatc tctggcggtt ttctggctga 1500  
 ccactctggt gccttccata acaaattat ccagagtatt tacgacactg ctgagaacat 1560  
 taatgtgagc tatcccgaat ggctgagccc tgaagaggac ctgaactttg taacagacac 1620  
 tgccaaggcc ctggcagatg tggcacggg gctgggaatg gctctgtatg agcttgcagg 1680  
 aggaaccaac ttcaagcaca cagttcaggc tgatccccaa acggttaccc gcctgctcta 1740  
 tgggttccctg attaaagcca acaactatg gttccagttt atcctcaggg aggacctaa 1800  
 gtcctacttg ggtgacgggc ctcttcaaca ttacatcgct gtctccagcc ccaccaacac 1860  
 cacttagttt gtacagttt ccttggcaaa tttgactggc acagtggtca acctcaccgg 1920  
 agagcagtgc caggatccaa gtaaaatccc aagtggaaaac aaggatctgt atgagtactc 1980  
 atgggtccag ggcctttgc atttaatga gacggaccga ctccccccgg tggcggttc 2040  
 tactgcacga tttagccaggg ccttgcattt tgcctttgaa ctgagtcagt ggagctctac 2100  
 tgaataactct acatggactg agaggcgctg gaaagatatac cgtgccccgg tatttctcat 2160  
 cgccagcaaa gagcttgagt tgatcaccct gacagtgggc ttccggatcc tcattttctc 2220  
 cctcatcgatc acctactgca tcaatgcca agctgatgtc cttttcattt ctccccccgg 2280  
 gccaggagct gtgtcataact gaggaggacc ccagctttc ttgcccagctc agcaggatcac 2340  
 ttccttaggc atctgtccca ctgggacaca accactaatt tgcacttggg acctccctgg 2400  
 gcctgtctca gattgggatt aacataaaag agtggaaacta tccaaaagag acaggggagaa 2460  
 ataaataaat tgcctccctt cctccgctcc cttttccat cacccttcc ccatttcctc 2520  
 ttcctctct actcatgcca gattttggg ttacaaatag aagcttctt ctcctgttta 2580  
 actccctagt taccctaccc aatttgcctt tcaggaccct tctactttt ctttcctgccc 2640  
 ctgtacctct ctctgtctc cacccttcc cctgtaccca gccaccttcc tgactggaa 2700  
 ggacataaaa ggttaatgt cagggtcaaa ctacatttagg cccctgagga cagggcattc 2760  
 tctgggctga gcctactgtc tccttccac tgccttttcc ccaggccctc agatggcaca 2820  
 ttagggtggg cgtgctgggg gtgggtatcc cacctccagc ccacagtgc cagttgtact 2880  
 ttttattaaat ctgtatataat tattttttttttt tttgtctttt tcctttattt tttttgtaaa 2940  
 tatatatata atgagtttca ttaaaaataga ttatcccaca cgacttgcac tgcttagtt 3000  
 tcttcccagg ccaccttgc t cagggagcc agactggaaag tcatgaagtt atctttatg 3060  
 ctatcatctt gggctccaga ggacccaagg agtaaggctc tgcataaaaaac agttgaagtc 3120  
 ctttcaaattt gcagggctg gtttcctct tgcataaaaaac atgttaacat agtttcttct 3180  
 cacttgcataa tgaac 3195

<210> 10  
 <211> 949  
 <212> DNA  
 <213> Homo sapiens

<400> 10  
 agcctccacc ctggcgatgg ctccctggtc ctactttctc tctcaaaactg gcttttctc 60  
 attcccttgc ctccggcaga cttectcgcc cccatgaccc ggtgttgcgt ctgatcaccc 120  
 caacatttgc ggctgccccaa tggggggcaa tgaagacccc agtgaaggaa tgcttagatg 180  
 tgtgaaatgt gaggacgcatt cgtcaaaaggaa cacctgagga cgtctcaaaag aagctcggcg 240  
 ggagagctga ggcgtcgaa gaaccaagaa tcatctttt tggaaaaatcg attcatcaaa 300  
 tgaatcttca gccaacaact gttcaagaag gattcaaaaata tcaacaggttc caagaagttaa 360  
 agcttggag gtcacaaaaat tagcaataga agctgggttc cggccatatacg attctgctca 420  
 tttatataat aatgaggagc aggttggact ggccatccga agcaagattg cagatggcag 480

tgtgaagaga gaagacatat tctacacttc aaagcttggc ccactttca tcgaccagag 540  
 ttggccgac cagccttggc aaactcactg aaaaaagctc aattggacta tggtgaccc 600  
 tatcttattc attctccat gtctctaaag ccaggtgagg aaccccttcc aacagatgaa 660  
 caagtggcaa aagtaatatt tgacatagtg gatctctgtc ccaccctggg agggcatgaa 720  
 gaaagtgtaa ggatggcagg aattggggca agtccatgtt ggtgtcacac ttcaaccgc 780  
 aggccgtggg gatgagtctc aaaaagcagg aatccagtt aagcggtctg caccctggg 840  
 gtgtccgatt taccgggtaa tgctgattcg gcagccagaa atgttggtgc aaagctgggg 900  
 cccccacaaat gggggccccc ccgctgtggg ccctgggtga aaaaccctg 949

<210> 11  
 <211> 14917  
 <212> DNA  
 <213> Homo sapiens

<400> 11  
 gctcgagatc cattgtgctc taaagggtgaa aagacctaga tggtagaagg caagcagtgg 60  
 aatgtgtctg ggtatccgag aaatatacag aaagcactta agagaactta atcattttt 120  
 tctcccttcc cttagattga atagggaaaa cctgcttct gcaaacaact gaaaaagctg 180  
 catttagaaa ctgcttctt ggccttcattc gagaagctgg aacttgaatt gttagcccc 240  
 ttatggaca agctctcaac tgctgatcac ccagtgattt acaccatggc cagcaagagg 300  
 aaatccacca caccatgcat gatcccagtg aagactgtgg tggtaaaga tgccagcatg 360  
 gaggcccagc cgcgtgagac ctgcctgaa ggaccccagc aggtctgccc cccagaagca 420  
 tctgctgcca gcagtggggc agcacaac cccagcgtt ctgatggctc tacactggcc 480  
 aatggcattc ggagcactt agatggctat ttatattctt gtaaataactg cgatttcaga 540  
 tcccatgaca tgacccatt tggggacat atgaactcag agcacacaga cttaataaaa 600  
 gacccaaacct ttgttatgcag tgggtgcagt tttctggcaa aaacccttgc ggggcttcc 660  
 ttgcacaatg ccacatgtca ctccggggaa gccagcttgc tggtaaacgt gccaagcca 720  
 gacaatcatg tggttgtgaa gcagagcatc cctgagagca ccagcacttc tgaccctagcg 780  
 ggtgagccca gtcgtgaaagg ggctgatggc caggcagaaa tcatcattac caaaactcca 840  
 atcatgaaaga taatgaaagg caaagctgaa gccaaaaaaaaa ttcatcataact caaggagaat 900  
 gtccctagcc agcctgtggg tgaggccctt cccaaagctgt cgactggaga aatggaggtg 960  
 agagaggggg accattccctt catcaatggg gcagttccag tcagccaggc atctgccagc 1020  
 tctgcaaaaa acccccatgc cgccaaacggg cccctgatag gaacagtgc agtttgccca 1080  
 gctggcatag cacagttctt ctcctccatc cagcagcccc cagtgcattgc ccaacaccat 1140  
 gtccaccagc cactgcccac ggccaaaggcc ctccccaaag tcatgatccc cctgaggcagc 1200  
 attccaaacgt acaatgcagc catggactt aacagttcc tgaagaactc cttccacaag 1260  
 ttcccttacc ccaccaaaggc cgagctctgc tatttgactg tggtagaccaaa gtatccagaa 1320  
 gaacagctca agatctgggtt cacagcccaa aggctgaaggc aggggatcag ctggccccct 1380  
 gaggagattt aggtatggccg gaaaaagatg ttcaatacag tcatccagtc tggctctcag 1440  
 cccacacaaat cgggtctaaa tacccttccat gtcggccatgt ctggcaatgt ccagcatctc 1500  
 atccaggccg ctcttccagg tcacgttgg gggcagccag aggttacagg agggggactt 1560  
 ctggctactc agccattgtt ggccaaatggg ttgcaagccaa caagttcccc tctccccctc 1620  
 acggtgacat cctgtcccaaa gcagccaggc gtggccacccaa ttaacactgt gtgttcaaat 1680  
 acaacgtcag ctgtgaagg ggtcaatgcg gcccagtcgc tcttcacggc ctgccccagc 1740  
 ataacctccc aaggcttccct tcatgactgc atctacaaaaa ataagaaatc tcatgaacag 1800  
 ctgtcagctc tggaaaggggat cttctgtcg aaccaggccc cagggcagag cgaagttgaa 1860  
 catctcacaa aagtgcacggg cctcagttacc agagaggtgc gggaaatgggtt cagtgatcgt 1920  
 agataccact gcccggaaactt gaaagggttcc agagcgatga tacctggaga tcacagttcc 1980  
 atcatcatttgc actctgtgcc agaggtgtcc ttctcccat cgtccaaaggc ccctgaggta 2040  
 acctgcattc cgacaaacagc cacatagca acccaccctt ctgccaaacgc acaatcttgg 2100  
 caccagactc ctgacttcc accaaccaaa tacaaggaga gagcccccgtt gcaagctcaga 2160  
 gcccctggaga gcaagtttgc acaaaaacctt cttecccttgc atgaggaact ggaccgcctg 2220  
 agaagtggaaa ccaaaatgac ccgacggaaa attgatagct ggtttcaga gagacggaaa 2280  
 aaagtgtatg ctgaggagac caagaaggctt gaggagaatg cctctcgagg ggaagaggag 2340  
 gctgctgagg atgagggtgg agaagaggat ttggccatgt agctaagggtt ctcttggtaa 2400  
 aatggctctc tggaaatgccc cagcagccat atcttggcag agcgcaaaatg cagccccatt 2460  
 aaaatcaacc tgaagaacctt gagggtcactt gaagccaaatg gcagggaaatg gattccagg 2520  
 ctgggtgcctt gtcgttccatc ggtatgttgc tcaaaacaaac tggcagagca gtcggccaggc 2580



gtgtttttt gttgctgatg tcttgtaacc atttgtttt tacatgggg ttagatcg 6180  
 gttctcaaag gtgaaaccag atgatcattc tgataaaagga aatttaaatt tgatacatat 6240  
 gctttgtata ttgttattac ttgtttcg ttttgactat aaaggagctt ttttatttg 6300  
 ggaggggagg agtgcattt ttgagaatct tgggttcctg aaaaagaacg ccctagttgg 6360  
 atggcttgcg aggcccttgg ggttggtag tgattgtaca acttaaagct cctttctt 6420  
 ggctgagtga caggtggctg ttcaagggttga ccaaagcacc ttgacacaag gactcccac 6480  
 tgtgcctct agtagcacaa ggaggaagtt ggacagaaca ttgggttagt cttgcggc 6540  
 tcacacatgt actagtggtc tcatctccag ctgccttgg gaggccgtcc caccaggaaa 6600  
 tctcttattt cgtagccctg agatgtggcc ttgtgggtt tatectgtc agtcagtggc 6660  
 ctagggcag gtcctgtgtt ctctccctct ctctccctgc tctggacat ctgtccctgg 6720  
 ctgccttca tggaggaagg acactggctt ttctgggtt atgctgtgt gatgctct 6780  
 gctttagcct cgtgtctct tgccttctt tggaccaata tcctcagatt ggtgcagctt 6840  
 ttcaaggatca gatatcacac cccaagtgaa taaaggcaac ttgcaggaga ggagagccag 6900  
 ccaagaagaa aattttaaaa ccaaaccctcg tttaggattt tcctaaagtc atcttctt 6960  
 ttttcttgcg cagagtttac ctggagatt tcaccagttt gactcaccat ttgcagatgt 7020  
 gctttgtat taaattttaaa ttccatcaata tcacatccat tctcaaggta gttatatgt 7080  
 ggagaagaaa aatccctctag acacatgaag gcccacatag tcaagtcttc cagggcaaag 7140  
 ccagcagccc acccagggtca ggtagccagc agggctcagt tcccctcaact ccagacacgg 7200  
 accctctctt tcagggtctc ttgacccagc ttcccttctt ccttttacct gagagcacag 7260  
 acctctctca gccagccctgc ccagaccacg gggggctact cccatgttagt ttggggagca 7320  
 cttgatctca gaaaagctcc attgtctgag caaatggca gttgtggagc tcaaggctt 7380  
 ctccctgtgtt caagtcctt ccccaagcaa ggcttcaacc tcatcttacc accatgttagt 7440  
 tttctcttgcg catttaagtg gggggcagg ggtgaggcaaa ccagtttgc ttttgcagaga 7500  
 ggtgaggcaaa ccagtttgc ttttgcagaga gtggctggag gaaaagtggc aatcaagggt 7560  
 ctgcttgggt tgctctgtt gcaaatggaa ccaacagggtt tctgctgc tctgtgtt 7620  
 cccagtgcga ggtcacaacca ggaggggtgg ggcagggtca accaagtggt ctctgaactc 7680  
 accgagcgtc tgcacttgg tttttttttt atggggatgtc agagagcgtc tggccttgg 7740  
 gaggggttga gaggccctt tttttttttt catcccttgc tcttgcctg cccacaaatc 7800  
 tgacctctt gaatggggac gcagtcctt aacagagaag tttctatggc aaagaagttt 7860  
 ctatttagct ctagatccag cagagtcatc cattctaact gccctgaagt ctagagcagg 7920  
 ggagggaaacc cagaggctgg ggttgcactt aggcagaccc tggatttccat atggacaagg 7980  
 acaggggaaa gcacccctt cctcaatttca tggaaaggatct atctttgggt tcgcaggact 8040  
 ttgaggatga taaagaacat ataggtaacta gcttgggtt gctgggtccaa agcttccaca 8100  
 gcccggagaa ttggctttc gtggctgtc tggcagctga gcaaggggag gaaggcagcc 8160  
 gctcttgggtt ggactctagg cacccctt gctgtccact tggataggcg gtgagcccc 8220  
 gggtaacttgcg aggagccctga gcatttccat gccatttagt ccttgcctt caggagactg 8280  
 gcttggaaacg tgggttcatg tggcgtgtca cacacacaca tgagcacctg tatgtgtt 8340  
 tgaatagtt ttcttggta atgtttttt acttctgttc ctttccgtaa gtggatgtt 8400  
 caaaaattaac gtgacttggc tggggcgttgg ggctcacacc tgaatccca gcactttggg 8460  
 aggccaaggc cacccttccat aacaggccaca ggtcagaagg ctgctgagtg cccctggaaag 8520  
 cagaatagct gggcaatggg tccttgcactc tctgaaatct cctcatttac tgctgaaagg 8580  
 ggaaaatgac aagaatagtt tattttccat agcatttctc tacgttgc tctgttgg 8640  
 tgagttctgag agaggcgtc tggtccattt gacaacacag acaggccccg actctgaggt 8700  
 gaagaaagct caggaggagg ccccgccagca gcccggggct gctgcccgtg tgaccacccc 8760  
 tggacccctt gcaggccacg gcccacccaga ggccaactcc aatgagaagc atccatccca 8820  
 gcaggacacg cggccctgtc aacagaccc gacaacacag gagaaggact acagtggaggc 8880  
 cgatggccctt tcggagagga ccacggccagca caaggccccg aatcgcccc agaagattgc 8940  
 caagaaatac aagagtgc tctggccggat cactctgtt gatgcctcg agtatgagtg 9000  
 tgaggtggag aaacatggcc gggggccagg gctgttgc tgggtctgtt aacaccccaa 9060  
 cctcttagag aaggactact tcggccgtac tttttttttt gatccggagt ggtggcttgg 9120  
 gctggacccc tccaaggaga tcaagaagca gatccggagt ggtggcttgg 9180  
 ggaggtgggt agcccttggat tttttttttt cacagtc aatccatccgc tgcatttgc 9240  
 ccagctgaca gaagacatca caagataacta cctgtccctg cagctgcggg cagacatcat 9300  
 cacggccgg ctggccatgtc cctttgtcac gcatgcctt ctgggtccct acgctgtgc 9360  
 ggctgagctg ggtgactat atgctgagga gcatgtggc aactatgtca gcgagctccg 9420  
 cttcgccctt aaccagaccc gggagctggaa ggagggatc atggagctgc ataagacata 9480  
 tagggggatg accccggag aaggcagaaat ccacttctta gagaatgc gcaagaatcc 9540  
 catgtacggc gtagacccctgc accatgc tcaaccatgtg ggcacatcgaca tcatgtt 9600  
 cgtttgcgcc aatggccctgc tcatttctaccg ggaccggctg agaataacc gcttgcctg 9660

gccccaaagatc ctcaagatct cctacaagag gagtaacttc tataatcaaga tccgggcctgg 9720  
 ggagtatgag caatttggaga gcacaattgg cttaagtc ccaaaccacc ggtcagccaa 9780  
 gagactgtgg aaggctcgca tcgagcatca tacatttttc cggtctgggtgt cccctgagcc 9840  
 cccacccaag ggcttcctgg tgatgggctc caagttccgg tacagtggga ggaccaggc 9900  
 acagactcgc caggccagcg ccctcattga ccggcctgca cccttcttc agcgttcttc 9960  
 cagcaaacgg tacaccatgt ccccgagct tgatggagca gagttctccc gcccagcctc 10020  
 ggtcagcgg aaccatgtat cagggcctga cggtgacaag cgggatgagg atggcgagtc 10080  
 tggggggcaa cggtcagagg ctgaggaggg agaggtcagg actccaacca agatcaagga 10140  
 gctaaagtcc tttagacaagg cagaagatgt cttgctgaag caccaggca gcatcaatga 10200  
 gctcaaaaagg accctgaagg agcccaacag caaactcattt caccgggatc gagactggga 10260  
 acgggagcgc aggctccct cctccccgc ctccccctcc cccaaaggca cccctgagaa 10320  
 agccaatgag tcccagagga cccaggacat ctctcagcgg gacttggta cttgagcctgg 10380  
 agcagccgca ggcttggaaag tgtttactca gaaaagcctc gcagcatctc ctgagggttc 10440  
 agagcattgg gtatttataag aaagagagta cactaggcca gaagagctcg gtctcttaaa 10500  
 agtgaccacc atgcagcagg aagaaaaggca ggcaggcctt gctggatcc ttgccaacgg 10560  
 cagactctcc aaggttagacg ttctgggtgg caagttcaaa gtggaagtgg ccacagaaga 10620  
 aatggtggga aacagaagag caaacaccca gcaacaagga aaaatgattt caagtctga 10680  
 agacttttag tcagtggggg aggaaggccc ctggatcagg gaaagcccag gaggggctgc 10740  
 cctggcttcc ggccgcacat tggcagaaaa gtcctcctgag ggctctgagc tcagggcaga 10800  
 caccagagag gcaaccatca ggaaccgctg catgtcagat ggtcagcgg agggccagac 10860  
 agagctgagg aaggggctgg aggacccctca cacttggggg agacccactg ctccaggac 10920  
 cagggcagca gaggtggacg tcctctctcc agcctccgac aaggggaggac tccagtcgtt 10980  
 tctattggat ccagcccacg cagaaggccag agctgagttt agcaatgaaa ctgataacttc 11040  
 ctttgcagag aggacccctt atttaattt tgaagaaaaa gactcagaag accaagtctt 11100  
 ccctccaccc ctggaggagga gaaaaggcg cctggatgcc cctcccgag gtgagcccag 11160  
 gcccacgctg aattcccttag acctgagggt ttctgctgtc gcttccagca ggagcaagga 11220  
 cgaagcccac atgacttccc caaaggaagg ggcagggacc cccaaagaacc atggaggacc 11280  
 tggtgacctg aagggtatcc cgcaggaca gacgtttgtc gaaggctggg aagatgccc 11340  
 gtggggagtg gaaggagagt ttccccaccc gacagccagc gcagcccgag aggaaggac 11400  
 ccccgtgagt ggagatttc tggggaaaggc tgagggaaatg cccacagagg aactgaagaa 11460  
 gcaccctctt cacagaggac agggcgtgca tcccggacccc caggcctgag cccttcctcg 11520  
 ggcacccctt ctgaatgtca ggaaggccagt caaaccagac agaggcaact tcccacccaa 11580  
 agagagggga gtggttccca cccagaaagg aggggctgag ctgaaggacc gcgaggcttc 11640  
 agcatttctt cacaatggagg tgatcattcc cctggcagcc tcccctggtc attctgagga 11700  
 cctggcagct ctggaggaaag ctcttcaccc ccaacaccttcc catgggtcag gggagcccttc 11760  
 ggagctcagg gagcccttcc tttagacatgt ccatcttcg aaagccagcc cagaccccaa 11820  
 ggaccaagta gggttgtgg tgccttcgc cacaggaggt gagcgcaggc ctccctccat 11880  
 caccagcaga aagccagag tagtccctga agaagctgag gggcgcatac ctctgggtt 11940  
 tgggtccct tcagggaaagc gaaggggat gacccctttc caggctgggg accaagaggg 12000  
 ctcccttagaa gatattgca agacccctgt gccaacaaa attcgatata ttgagaccca 12060  
 cggagctgaa actccggaa tgagtgggg tgaagcaagg tcccttcacca atgacgtatc 12120  
 ttcagaggca cccgtgggac aagcagagca gcaagccgtt acgtctcag acctggctt 12180  
 cgcacccactc cagccccccag gggacttttc cagcccccgg gccacacatt ccacagtgt 12240  
 acctctggct accagacact tcagggggca cacttctgca tccctaccagg aagcacacac 12300  
 ggaacttagag cccgttccca ccaattcagg ctgtgaaacc acgctggcag aagctactgg 12360  
 aactggggta actccggca acaaattccgg agatgcggc acggaaagaga agcgctccac 12420  
 caacttagca gccaacaccc ctggggaaaggc ggggcgcctg agatggcaca gcccctcggg 12480  
 ccctcagaga gcaggggctgca gggaggccgc cggggagaaa gtcacccac cacgtccccg 12540  
 ggcacccagag agtgacacag gcgatggaga ccaggaccag gagaggacca cgggtttctt 12600  
 gaaggacaac caccctggca ttgagcggaa gtgctccagc atcacggcata gctctacgtc 12660  
 tagccctggag gctggggatg acttcacccgtt cattgggtac taccatggca ggcgccttcga 12720  
 agactctcc cgcagccctgc ctgagctgca ccgggacaaa agcgactcgg acactgaggg 12780  
 cctgtgttcc tccccggatc tcaacaaggc gggccccggc caggatgtat agtctggggg 12840  
 cattggggac agcccgatc gagggggctg ctccaccccg gatatgcccc agtttggagcc 12900  
 cgtgaaaaca gaaaccatga ctgtcagcag tctggccatt agaaaagaaga ttgagccgga 12960  
 ggcgtactg cagaccaggat tctccgtat ggataacacc cagggttgc ggtgtcc 13020  
 agtggggagg gagttcatag caaccactcc ctccatcacc acggagacca tatcgaccac 13080  
 catggagaac agtctcaagt ccggggaaagg ggcagctgca atgatccca gcccacagac 13140  
 ggtggccacg gaaatccgtt ctcttcctcc gatcatcgaa aaagatgtcc tcaccagcac 13200

ctacggcgcc actgcggaaa ccctctcaac ctccaccacc acccatgtca caaaaactgt 13260  
 gaaaggaggg ttttctgaga caaggatcga gaagcgaatc atcattactg gggatgaaga 13320  
 tgtcgatcaa gaccaggccc tggcttggc catcaaggag gccaaactgc agcatcctga 13380  
 tatgctggta accaaagctg tcgtatacag agaaacagac ccatacccaag aggagaggaa 13440  
 caagaagcca cagaagctaa aacgagaaac taagaataac aaaaggcaac cttgcacccg 13500  
 gcggAACCTG caggcacggg ccattttcc cgccgacccag ggctctgccg gaccgcttcc 13560  
 cccgtcgctc cagtcaagc ccaaagctgg agaacttccg gtgcgttcc gctgtaccgg 13620  
 aacgtggggc gaggcgctgt tcataaagaaaa aaaagggttc tttggtcac ccaccactgg 13680  
 ccccatggct gccgtgcaga tggatcctga gctagccaaag cgctcttct ttgaagggc 13740  
 cactgtggtc atcctgaaca tgcccaaggg aacagagttt gggattgact ataactcctg 13800  
 ggaggtcggg cccaaagttcc gggcgctgaa gatgatccct ccaggcatcc acttcctcca 13860  
 ctacagctct gtggacaagg ctaatccgaa ggaagtaggc cctcgatgg gtttcttc 13920  
 tagcctgcac cagccccggc tgacagtgtc ggcgtggagc acactcaggaa aagaggtaga 13980  
 cctgtccccca gccccagagt ctgaggtgaa ggcattgagg gccaacctcc aggagctgga 14040  
 ccagttcctg gggccttacc catatgccac cctgaagaag tggatctcac tcaccaactt 14100  
 catcagcgaa gccacagtgg agaaacctaca gcccggaaat cgacagatct gtgcctttc 14160  
 cgatgtgcta cctgtgcctc ccatgaagca cacaaggac cgccgtggggc agaatctacc 14220  
 ccgctgtggc attgagtgca aaagctacca agagggctg gcccggctac cagagatgaa 14280  
 gcccagagcc gggacagaga tccgcttctc agagctgccc acgcagatgt tcccagaggg 14340  
 tgccacgcca gctgagataa ccaagcacag catggacctg agctatgccc tggagactgt 14400  
 gctcaacaag cagttccccca gcagccccca ggtatgtc ggtgaactcc agtttgctt 14460  
 tgtgtgcttc ctgctggggaa atgtgtacga ggcatttgag cattgaaagc ggctctgaa 14520  
 cctcctgtgc cggtcagaag cagccatgtc gaagcaccac accctctaca tcaacctcat 14580  
 ctccatcctg taccaccaggc ttgggtgagat ccccgctgac ttcttcgttag acattgtctc 14640  
 ccaagacaac ttccctcacca gcacccatc gaaaggattc ttgattgaca tcagtgaa 14700  
 ctccatcgag gtcctgtttc tcagaggtac agaacgcctt tctaaagcca acctactgtt 14760  
 ggtatgatcc ctcatcgccg tggatgccac cctgagaaag aaagctgaaa agttccaagc 14820  
 tcacctgacc aagaagttcc ggtgggactt tgctgcggaa cctgaggact gtgcgggt 14880  
 ggtgggtagg ctccctgagg gcatcgagat gggctaa 14917

<210> 12  
 <211> 1823  
 <212> DNA  
 <213> Homo sapiens

<400> 12

cccacttccg gagacctcac acaagatggc ggcacccgag gaacacgatt ctccgaccga 60  
 agcgccccag cccgatttgtg gaagaggagg aaactaaaac atttaaagac ctgggtgtga 120  
 cagatgtgtt gtgtgaagct tggatcgttggac aaaacccacc aagatccaga 180  
 ttgaagctat ttccctggcc ttacaagggtc gtgatatcat tggatcttgc gaaactggct 240  
 ctggaaagac aggcgcctt gcttgcctt ttctaaacgc actgctggag accccgcagc 300  
 gtttgtttgc cctagttctt accccgactc gggagctggc ctttcagatc tcagagcagt 360  
 ttgaagccct ggggtccctt attggagtgc agagtgtgtt gattgttaggt ggaattgatt 420  
 caatgtctca atccctggcc cttgcaaaaa aaccacatat aataatagca actccctggc 480  
 gactgattga ccacttgaa aatacgaaag gtttcaactt gagagctctc aaataacttgg 540  
 tcatggatga agccgaccga atactgaata tggatttga gacagaggtt gacaagatcc 600  
 tcaaagtgtat ccctcgagat cggaaaacat ttcccttctc tggcaccatcg accaagaagg 660  
 ttcaaaaaact tcagcgagca gctctgaaga atccctgtgaa atgtgcgtt tcctctaaat 720  
 accagacagt tgaaaaatta cagcaatattt tccctctaaa ttcaaggata 780  
 cctacctgggt ttatattcta aatgaatttg ctggaaactc ctttatgata ttctgcagca 840  
 cctgtataaa tacccagaga acagcttgc tactgcggaa tcttggcttc actgcctatcc 900  
 ccctccatgg acaaattgtt cagatgtgtt gctctgttgc gcttagatc ctttataaag tttaaggcca 960  
 aggcccggtt cattcttcta gcaacttgacg ttggccagccg agtggatggac atacctcatg 1020  
 tagatgtggt tgcactttt gacatttcta cccattccaa ggattacatc catcgagtag 1080  
 gtcgaacagc tagagctggg cgctccggaa aggcttattac tttgtcaca cagttatgt 1140  
 tggaaacttcc ccaagcgatc gaaactttaa ttggggagaa actaccaggat tttccaaacac 1200  
 aggtatgatga ggttatgtatc ctgacagaac gctgcgttgc agcccaaagg ttggccggaa 1260  
 tggatgtttaag ggagcatgga gaaaagaaga aacgctcgccg agaggatgtt ggagataatg 1320

atgacacaga gggtgctatt ggtgtcagga acaagggtggc tggagggaaaa atgaagaagc 1380  
 ggaaaggccg ttaatcactt ttatgaaggc tcgagttctg ctgttctgta aaagagaatt 1440  
 ggagaatgaa acctgctcca acagagatca tgagactgaa attggtcaga attgtgtcca 1500  
 gaatgtgctc agctaattca gtattcttcc ccattctggg ttggagttt ca ctcagagta 1560  
 attcttacag tgctgtatgtc aagactgtta ctgttctcg actttgattc cttgctcatg 1620  
 acatgagtag ggtgtgctt tctgtcactt cacacagacc tttgcctt tttagctgca 1680  
 agtcaaggac taggttgatg atgcccattga cctgttaattt taaaagaagct tggacatctg 1740  
 caaatgatat ttaaaccatc ttggcttgtt ctttattcaa actaatgtga aacaataaat 1800  
 ttaaatatta tttttaaaaaaa aaa 1823

<210> 13  
 <211> 869  
 <212> DNA  
 <213> Homo sapiens

<400> 13  
 cagcattgca gcagctccac catggcctgg gctcctctgc tcctcacccct cctcagtctc 60  
 ctcacagggt ccctctccca gcctatctt actcagccac cttctgcac agcctccctg 120  
 ggagcctcgg tcacactcac gtgcagtgtg agcagcgact acaagaatct tgaagtggac 180  
 tggttcagc agagaccagg gaaggcccc cgaaaaatgtca tgccgtgtgg cactgggtggc 240  
 gttgtggat tcagaggggc tgacatccct gatcgcttt cagtctcggg ctcaggcctg 300  
 aatcggtttc tgaccatca gaaatcgaa gaagaggatg agagtacta ccactgtggg 360  
 acggacccctg gcagtgggac cagcttcgtg tcttgggtgt tcggcggagg gaccaagttg 420  
 accgtccctaa gtcagccca ggcgtcccccc tcggtaactc tggccggcc ctcctctgag 480  
 gagcttcag ccaacaaggc cacactggg tgacttcataa gtgacttcta cccggagcc 540  
 gtgacagtgg ccttggaaaggc agatagcagc cccgtcaagg cgggagtggc gaccaccaca 600  
 ccctccaaac aaagcaacaa caatcacgcg gccagcagct atctgagccct gacgcctgag 660  
 cagtggaaatg ccaacagaag ctacagctgc caggtcaacgc atgaaggggag caccgtggag 720  
 aagacagtgg cccctacaga atgttcatag gttctaaacc ctcacccccc ctacgggaga 780  
 cttagagctgc aggatcccac gggaggggtg tctcctccca cccgcaaggc gtcaagccct 840  
 tctccctgca ctcataacc gatcataata 869

<210> 14  
 <211> 799  
 <212> DNA  
 <213> Homo sapiens

<400> 14  
 ccctgctcag ctcttggggc cgctaattgt ctgggtccct gtgcagagat tggatgacc 60  
 cagactccac ttccttgc tatcaccctt ggagagcagg cctccatgtc ctgcaggct 120  
 agtcagagcc tcctgcatacg tggatggatc acctatttgtt attgggttct gcagaaagcc 180  
 aggccagttt ccacagctcc tgatctatga agtttccaaac cgggtctctg gagtgcacc 240  
 attagttca gtggcaggg gtcggggaga gaattcacat tgagaatcag ccgggtggag 300  
 gctgacgtg ctggagttt ctactgcattt caaactacac agactccgaa cactttggc 360  
 caggggacga ggctggagat caaacgaact gtggctgcac catctgtctt catctcccg 420  
 ccatctgtatg agcgttggaa atctggaaact gcctctgtt tggctgtctt gaataacttc 480  
 tatcccaagag aggccaaatg acagtggaaatg gtggataacg ccctccaaatc gggtaactcc 540  
 caggagatg tcacagagca ggacagcaag gacagcacct acagcctcag cagcaccctg 600  
 acgctgagca aagcagacta cgagaaacac aaactctacg cctgcgaatg caccatcag 660  
 ggcctgagct cggccgtcactt aaagagctt aacagggggag agtggtagag ggagaagtgc 720  
 ccccacctgc tccctcagttt cagctgacc ccctccatc cttggcctc tgaccctttt 780  
 tccacagggg acctacccc 799

<210> 15  
 <211> 1731  
 <212> DNA

<213> Homo sapiens

<400>	15	tttttttttt ttgggttgtca ttgaggatat ttattggggtt ttcatgagtg cagggagaag 60
ggctggatga	cttgggatgg	ggagagagac ccctccccctg ggatcctgca gctccaggtc 120
cccgtaggtg	gggttagagt	tggAACCTA tgaacattct gttagggcca ctgtcttc 180
cacgggtctc	ccttcatcg	tgacctggca gctgttagctt ctgtggact tccactgctc 240
gggcgtcagg	ctcaggtagc	tgctgccgc gtacttgtt tgctctgtt tggagggtt 300
ggtggctccc	actcccgcct	tgacgggctt gccatctgcc ttccaggcca ctgtcacagc 360
tcccggttag	aagtcaactga	tcagacacac tagtgtggcc ttgttggctt ggagctcctc 420
agaggagggc	ggaaacagag	tgacagtggg gttggcctt ggctgaccctg tggacagg 480
gaagggggtg	agagagggca	gacagaatac cggggtgtt tggagccctt ctctctgtct 540
aaagtctctg	ggagggttca	cagtgtggcc atccggtcca cccggggttc tccctcttc 600
tttccccatc	cttccactc	atgccctgtg gagagcagac agctctgtgc cttccctagga 660
gccctcccaa	gtcaccttcc	acaggtgtcc tggcccagcc ccttcctctt acagcctcaa 720
tttctccata	tacccaggc	aggctgtgtt cttcttc tttgttccctt cttctctgtat 780
ctctggagtc	ttagtttaga	atctggctt gaccccttggaa tccctcattt ccattccat 840
accccccctcc	atcacccact	ttatttttcc aggacctaga gcctccctcg tgaactgtgg 900
gtccccctgct	catccctgtag	gactgtcctg gcaggcagtg tgggggaga cccaaaggctg 960
ctttaactg	gagttcccta	tccctcacag gcaccgggtt ctgccccagc ccagccact 1020
tggctctcct	ggcaaggagt	gggctccacc tagacaagcc tcagggctcc tctgaggctc 1080
tgagatgttt	cctgtctcca	caagccccac cacagaaccc ttccacctcg ctgttcctgg 1140
ggctgctccc	acagactatg	agactcagca gcccccaggc ccaccccaagc agcctgtat 1200
gacccaaaac	ttcacctgg	agccatggag ttctctgcac ccctcattca ctccccctctg 1260
gtcatttcct	gagtctaaca	tgcctttga ggaaggcagg agggcgatcc gtgaacagag 1320
agacactggg	ccccagaggt	gacggggctc cagggacaga cacatctcg ccctaagaga 1380
ctgtctcctt	tctggtgact	gtcctggag ggttggattc tggcacctca cccagctca 1440
cccgtaggtc	tgtgtcccc	tgtcctcatg acccagcaca ggccacagag ctgcagccta 1500
gacccagagc	cctctctgtt	ccctccattt gtctccctt ggggtgacct ctgtgtcacc 1560
aggccgtgt	gccctcccag	gctgattggc atccagtctt cagcctagac cctcagctgt 1620
tcttggggct	gtccccctag	actatgagac tcagcagctc ccaggcccac cccagcagcc 1680
tctgtcttgc	accccaggag	tcactggca atgtccctaa ggacactgca g 1731

<210> 16

<211> 662

<212> DNA

<213> Homo sapiens

<210> 17

<211> 336

<212> DNA

<213> Homo sapiens

<220>  
<221> unsure  
<222> (268)

<400> 17  
tttaaaaaaa atccatctta gtatcttgc ccccacccctt caccactca cagagaagcc 60  
cacatgagga aacaggttat gtcttgaca tctctgtccc cctcagtgtc tggatatgt 120  
actgacacac agcatgttct caagaaatgt ttgaatcaca gtacattgaa tcagtaacag 180  
tctgactgac ccccaggcag aaaatgcaga ggcattttt ctctctattc cagattcag 240  
ctgttagcctc ttgttaattct catattgnntt ttcaatcacc agaattgatt tccctcatcc 300  
ctcttccag ggtcatctcc agtgaactgt attaat 336

<210> 18  
<211> 3300  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> (892)

<400> 18  
gagcccgagc cgccgcaccc cgccctggcca tggctttgc aagtttccgc cgcatcctgg 60  
ccttgctac cttcgagaag agaaagtccc gcgaatatga gcacgtccgc cgcgacctgg 120  
accccaacga ggtgtggag tatectggc gagctggcg acggcgctt tcggaatgg 180  
ttacaaggcc aagaataagg agacgggtgc tttggctgc gcaatagtca ttgaaaccaa 240  
gagtgaggag gagctggagg actacatcg ggagattgag atcctggcca cctgcgacca 300  
ccccctacatt gtgaagctcc tgggagccta ctatcacgac gggaaagctgt ggatcatgat 360  
tgagttctgt ccagggggag ccgtggacgc catcatgctg gagctggaca gaggcctcac 420  
ggagccccag atacaggtgg tttggccca gatgctagaa gcctcaact tcctgcacag 480  
caagaggatc atccaccgag atctgaaagc tggcaacgtg ctgatgacc tcgagggaga 540  
catcaggctg gctgactttt gtgtgtctgc caagaatctg aagactctac agaaacgaga 600  
ttccttcatac ggcacgcctt actggatggc ccccgaggtg gtcatgtgtg agaccatgaa 660  
agacacgccc taegactaca aagccgacat ctggccctg ggcacacgc tgattgagat 720  
ggcccagatc gagccgccc accacgagct caaccccatg cgggtcctgc taaagatcgc 780  
caagtccagac ctccttcacgc tgctcacgcc ctccaagtgg tctgttagagt tccgtgactt 840  
cctgaagata gccctggata agaaccaga aacccgaccc agtgcgcgc antgctggag 900  
catcccttcg tcagcagcat caccagtaac aaggctctgc gggagctgg ggctgaggcc 960  
aaggccgagg tgatgaaaga gatcgaagac ggccggatg agggggaaaga ggaggacgcc 1020  
gtggatgtcg ctcacccct ggagaaccat actcagaact cctctgaggt gagtcggcca 1080  
agccctcaatg ctgacaagcc tetcgaggag tcaccttcca ccccgctggc acccagccag 1140  
tctcaggaca gtgtgaatga gccctgcagc cagccctctg ggacagatc cctccaaacc 1200  
accagttccc cagtcgtggc ccctggaaat gagaacggcc tggcagtgc tgcgtccctg 1260  
cggaagttcc gacccgtgtc aatggatgcc agaattcagg tagcccagga gaagcaagtt 1320  
gctgagcagg gtggggaccc cagcccgacca gccaacagat ctcaaaaaggc cagccagagc 1380  
cggcccaaca gcagcgcctt ggagaccttg ggtggggaga agctggccaa tggcagcctg 1440  
gagccacctg cccaggcagc tccaggccct tccaagaggg actcggactg cagcagcctc 1500  
tgcacctctg agagcatgga ctatggtacc aatcttcca ctgacctgtc gctgaacaaa 1560  
gagatggct ctctgtccat caaggacccg aaactgtaca aaaaaacctc aagcggacac 1620  
gcaaatttgt ggtggatgtt gtggaggtga gcatcaccac ctccaagatc atcagcgaag 1680  
atgagaagaa ggtatggagg atgagatttc tcagggcaca ggaactccga gagcttcggc 1740  
tgctccagaa agaagagcat cggaaaccaga cccagctgag taacaagcat gagctgcagc 1800  
tggagcaaat gcataaacgt tttgaacagg aaatcaacgc caagaagaag ttcttgaca 1860  
cggaaattaga gaacctggag cgtcagcaaa agcagcaagt ggagaagatg gagcaagacc 1920  
atgcccgtgc cccggggag gaggccaggg ggtatccctt ggagcaggat cgggactaca 1980  
ccaggttcca agagcagct aaactgtga agaaagaggt gagaacggag gtggagaagc 2040  
tcccccgaca gcagcggaaag gaaagcatga agcagaagat ggaggagcac acgcagaaaa 2100  
agcagttct tgaccgggac tttgttagcca agcagaagga ggacctggag ctggccatga 2160

agaggctcac caccgacaaac aggccccgaga tctgtgacaa ggagcgcgag tgcctcatga 2220  
 agaagcagga gtccttcga gaccggaaag cagccctgtg ggagatggaa gagcaccagc 2280  
 tgcaggagag gcaccagctg gtgaagcagc agctcaaaga ccagtacttc ctccagcggc 2340  
 acgagctgt gcgcaaggcat gagaaggagc gggagcagat gcagcgctac aaccagcgca 2400  
 tgatagagca gctgaagggtg cggcagcaac aggaaaaaggc gcggctgccc aagatccaga 2460  
 ggagtgaggg caagacgcgc atggccatgt acaagaagag ccccctgtaa actggagttg 2520  
 ctggtgggca gcccctgttc ctgcattggaa ctggagctgt atggagttga cgacaagttc 2580  
 tacagcaagc tggatcaaga ggtatgcgtc ctgggctctt accctgtaga tgacggctgc 2640  
 cgcatccacg tcattgacca cagttggcc cgccttggtg agtatgagga cgtgtccccg 2700  
 gtggagaagt acacgatctc acaagaagcc tacgaccaga ggcaagacac ggtccgctct 2760  
 ttcctgtgaagc gcagcaagct cggccggtaac aacgaggagg agcgggctca gcaggaggcc 2820  
 gaggccgccc agcgcctggc cgaggagaag gcccaggcca gctccatccc cgtggcagc 2880  
 cgctgtgagg tgcgggccc gggacaatcc cctcgccggc gcaccgtcat gtatgttagt 2940  
 ctcacagatt tcaaggctgg ctactggatt ggtgtccgct atgatgagcc actggggaaa 3000  
 aatgtatggca gtgtgaatgg gaaacgctac ttcaaatgcc aggccaagta tggcccttt 3060  
 gtcaagccag cagtcgtgac ggtggggac ttcccggagg aggactacgg gttggacgag 3120  
 atatgacacc taaggaatcc ccctgcttca gtccttagct cagccactga ctgcccctcc 3180  
 tgtgtgtgcc catggccctt ttctcttgac cccatttaa ttttattcat ttttccttt 3240  
 gccattgatt tttagactc atgcattaaa ttcaactagaa acccagaaaa aaaaaaaaaa 3300

<210> 19  
 <211> 349  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> (6)

<220>  
 <221> unsure  
 <222> (14)

<220>  
 <221> unsure  
 <222> (25)

<220>  
 <221> unsure  
 <222> (28)

<220>  
 <221> unsure  
 <222> (30)

<220>  
 <221> unsure  
 <222> (32)

<220>  
 <221> unsure  
 <222> (34)

<220>  
 <221> unsure  
 <222> (54)

<220>

<221> unsure  
<222> (60)

<220>  
<221> unsure  
<222> (66) .. (67)

<220>  
<221> unsure  
<222> (83)

<220>  
<221> unsure  
<222> (85)

<220>  
<221> unsure  
<222> (92)

<220>  
<221> unsure  
<222> (95)

<220>  
<221> unsure  
<222> (103) .. (104)

<220>  
<221> unsure  
<222> (145)

<220>  
<221> unsure  
<222> (152)

<220>  
<221> unsure  
<222> (160)

<220>  
<221> unsure  
<222> (179)

<220>  
<221> unsure  
<222> (197)

<220>  
<221> unsure  
<222> (222)

<220>  
<221> unsure  
<222> (238)

<220>  
<221> unsure  
<222> (246)

<220>  
<221> unsure  
<222> (249)

<220>  
<221> unsure  
<222> (258)

<220>  
<221> unsure  
<222> (266)

<220>  
<221> unsure  
<222> (273) .. (274)

<220>  
<221> unsure  
<222> (276)

<220>  
<221> unsure  
<222> (284)

<220>  
<221> unsure  
<222> (286)

<220>  
<221> unsure  
<222> (290)

<220>  
<221> unsure  
<222> (298)

<220>  
<221> unsure  
<222> (324)

<220>  
<221> unsure  
<222> (328)

<220>  
<221> unsure  
<222> (335)

<220>  
<221> unsure  
<222> (347)

<400> 19  
ttaaanattt aaanatatta aggtntcntn tncngctcat cttcacagga aaanaatttan 60  
attccnnaca aacacctttc aantnttacc cnngnaagct gttnngaactg gaccttgaag 120  
aaggaaatac tttctgactc attgnaattt gntatagtca nagtaagtaa ggcacaaant 180  
ttgaagataa acttggnaca gtatgtatg ccttttgtta tnaaatgcaa ctttggngna 240  
ttactngana tttttcntc ataganttac tannanaagt tttnanaatn ttactgatna 300  
ccactgttt tgattttgct attnttnca aattnactat atatgangt 349

<210> 20  
<211> 4665  
<212> DNA  
<213> Homo sapiens

<400> 20

agcggggagg gccccgagcg gcgcagatag ggagggtggg gctgtgccc gcggcgcggc 60  
gcctgccact ggcgaggcgc ctcaggaaga gctcggcattt gcccctttt ctccaggtcc 120  
cccttccccg caacttccca cgagtgcag gtgcgcgag cgccgagttt cgccgattgg 180  
aaagaagcga ccgcggcggc tggaccctg attgctgtcc ttcaacgtgt tcattatgaa 240  
gttatttagta atactttgt tttctggact tataactgtt tttagaagtg actcttcctc 300  
tagtttgcctt cctaagttac tactagtatc ctttgatggc ttcaagagctg attatctgaa 360  
gaactatgaa tttcctcattc tccagaattt tatcaaagaa ggtgtttgg tagagcatgt 420  
taaaaatgtt ttatcacaa aaacatttc aaaccactac agtattgtga caggcttgc 480  
tgaagaaagc catggcattt tggctaattt catgtatgtatc gcaatcacaa agaaacactt 540  
ttctgactct aatgacaagg atcctttttt gttggatggc gcaatcacata tttgggtgac 600  
caatcagctt caggaaaaca gatcaagtgc tgctgctatg tggctggta ctgatgtacc 660  
cattcagcat accatcttctt cctattttt gaattacaac tcctcagtgtt catttgggaa 720  
aagactaaat aatattacta tggcttaaaa caattcgaac ccaccagtca cctttgcac 780  
actatattgg gaagaaccag atgcaagtgg ccacaaatac ggacctgaaatgataaaagaaaa 840  
catgaggcaga gtgttggaaaa aaatagatga tcttattcggt gacttagtcc aaagactcaa 900  
gatgttaggg ctagggaaaa atcttaatgt gatcattaca agttagtcatg ggtatgacc 960  
gtgttctcag gacagactga taaaccttggat ttcctgcattt gatcattcat actacactt 1020  
tatagatttgg agcccaattt ctgcaataact tcccaaaataa aatagaacag aggtttataa 1080  
caaactgaaa aactgttagcc ctcatatgaa tggggatcttcaaaagaagaca ttcctaaacag 1140  
attttattac caacataatg atcgaattca gcccattattt ttgggttgcg atgaaggctg 1200  
gacaattgtt ctaaatgaat catcacaaaaa attaggtgac catggttatg ataattctt 1260  
gccttagatg catccattttc tagctgccc cggacctgca tttcacaaag gctacaagca 1320  
tagcacaattt aacattgtgg atatttatcc aatgatgtgc cacatcctgg gattaaaacc 1380  
acatcccaat aatggggacct ttggtcatac taagtgcctt ttagttgacc agtgggtcat 1440  
taatctccca gaagccatcg cgattgttat cgggtcaatc ttgggtttaa ccatgtaac 1500  
atgcctcata ataatcatgc agaataagact ttctgtaccc cgtccattttt ctcgacttca 1560  
gctacaagaa gatgatgtg atcctttat tgggtgacat gtgttagggc ttatacaagaa 1620  
tgtctttgtt taatcacaaa actaagaata catccaaaga atagtgttgc aactatgaaa 1680  
aagaataactt tggaaagacaaa agaactttaga ctaagcatgt taaaattattt actttgttt 1740  
ccttgcgttt tggggatcttcaaaagaagaca ttagataacg ctgaccatag taaaattgtt 1800  
agtaaatcat taggttaacat cttgtggtag gaaatcatta ggttaacatca atccctaaacta 1860  
gaaatactt aaatggctt tgaaaaaaat acttcctctg cttgtatccc gcgatgaaaga 1920  
tgtgatacat ctttaatgtt aaatatacca aaattttagt ggcatgtttt tctaataat 1980  
ttatataattt gtaaaagaaaa caacagaaaat ctttatgcaa tttgtgaatt ttgtatattt 2040  
gggagggaaaa gcttcctata tttttatatt tacctttaat tagttgtat ctcaagtacc 2100  
ctcttgaggt agggaaatgtt ctgtgtatgtt aaataaaattt ggacgacata gaaaagatatt 2160  
agcaaatgaa gaaatattttt aaggaaacctt atttgaaaaaa aaaagcaaaag accatttgat 2220  
aaaagcctga gttgtcacca ttatgtcttta agctgttagt cttaaagattt atgttaaaa 2280  
aattcagaag aaaagagaga caagtgcctt tctctctatc tatgtcttaat gcctttagt 2340  
aagttactta gttgtttgcg tggccctgtt caagtgtgtt tgggtgtggc tgggtggaca 2400  
ttatgtgatt tactatataa ggaggtcaga gatggactgt ggccaggctt ccacattcc 2460  
gaagcacaca gatctcaggaa aaggttattt ttgcacttca tatttttttta ctttctccctt 2520  
actcacaagt taaaatcata acttaatttc attaactttt atcatttaac tctctcatgt 2580  
ttgttgcgtt acggaggtatc caaatgtgc agaaaaattt atgacccaaa tacaatctc 2640  
aatatgactg ggacagaatg aggaatggag atttttgtat ttatctttgg gactttatgc 2700  
cttactttttt aggctataga atagtttgcg aatagccctt gtgttaccc cacttttttcc 2760  
ctttcacacc attcatatgtt taagtggcag aatagccctt gtgttaccc cacttttttcc 2820  
tccagtattt gcatcacaga aataatccctt ctgttttaaca tgggttgc gggccaaagg 2880  
tttattgtgtt agaactgtca tcctgcctt gctagctgtt accttcttagt aatcaaaattt 2940  
aatatgaaga aacttaggttgc tgacagacta gattatattt agtaggggaa aaattgggct 3000  
caagaaccat tcatcagttac gtgagacaag cagttatag tatgtatctt aaagttttga 3060

caatataaaa taaacttggta aactgtttta caaatataaaa agtataataa atatgcagcc 3120  
 cagttaaata ttgattatct gtgatggtaa agaacaacag tggtgccagt catcaaacat 3180  
 acagtgcgtc ctattgagtc actgctaatt tcttgagcct ggtatggct gcctattgt 3240  
 tttgtggttt ttgagaggca ttttcaaacc ctgtataaaat aatccatgtc gttggtcata 3300  
 agttaactgt attaagaaca gtaaaaataaa taaaaaccac tagtactaat tttgcttaa 3360  
 aaaaatttct aatttttttcc acataaaaaca attatcctaa aggttaatag ttgatcgaaa 3420  
 cagaataataa gaaaaatttct tctttaattt ccattaaaaaa gcaaatacgca ttgacacatt 3480  
 taaagctttt catttaaagt agtggatgtt tttgaagtat ctaaaatagt agcagaatat 3540  
 tttatacttg gtccttgc aa tggtgtgagt tttatgatt gcattatcgat gattgggt 3600  
 tatgagtttca agaaaatctat acttggcattt caactcatga gtggatttta tataggatgg 3660  
 aacaggaagg tatgtccgtt cagtatctta accctttca caagacattt acctatttgc 3720  
 ctttcccttac gttctcaaaa tattaactcg aattgttaat taagcaaaaaa tgtaaaaagt 3780  
 atatgttgc gggacaagaa gaatagtatt tatttaataaa aacatataattt atattgaact 3840  
 atgtgttaat tcattttgtat cttttaaaaaa attatcactg taaaagccat tgactccctt 3900  
 agtacactga gaaaaatctt atagtaaaac tagccttca cattaagggtt ttgggtgt 3960  
 ttttggtaaa taactaacat gctgctctat tttctgggtg tagaaaggat ttggctctag 4020  
 gaaacatttta cttgtttgtg aaaacaatac cccaaaggtaa tagggaaaagt ttgagttaa 4080  
 tgtttttaat tcagtcagtg aattcagaat aagtcatttgc atgtataaca tagggacagt 4140  
 tctgctgctg ttattttat gcaatttttc ttggtaatag caatagaata aaacatattt 4200  
 caatgtttgt gtatagggtt tatatttata ttccacttagg aatggcataa gaatttata 4260  
 ataaatttctt gtaacattaa aggattaaaaa tgtttttaca ttgtttttgg gtgtccctt 4320  
 cttgtgccca tatctgataa gctttatggta ttattgcatt taattccctt tattttggagg 4380  
 gttttacttc ttgttaaca tataaaaggta taaatgaagg acaaggagga gatggaaaat 4440  
 gtgtattttat tgtaattttctt taaaatagtg tgtaaaaataa ataacatcgat tttgctttaa 4500  
 agaaatgtgt atgttagtgcc ttaattttaa ttaaaaatattttt tttgactgtt acttgagttc 4560  
 agaattaatg actttgttca tgatttttaa aatgtgtgt aataaaaatctt accaaaaaat 4620  
 tcttactgtta attatttaat ataaagttca gtgtcaaaaaa aaaaaa 4665

<210> 21  
 <211> 437  
 <212> DNA  
 <213> Homo sapiens

<400> 21  
 tagcaacagg cctggagggtg ctgcagtagt gggggaaaaat ggaagggtgaa ggggtggagtg 60  
 tttgtgcag gacagctgag tggagggtgg ggacaggtgc aaactggaga ggcctagaga 120  
 gctagagaag caagtaaggcc ccagggccag agtcggcttc aatggaaaca cagcccagt 180  
 ccctaaggcc cctaactttt gctggctgtt tcttgaccccc aagccagggt tgggagtcct 240  
 ctgggcatcc attttttctt aaggaaactgg acagagttaca cacaggaaag gaagctgtca 300  
 ccctttgcc atctggctcc aggggcctcc agtccagcat tcttccttct tcccttgatt 360  
 ggggtggggcc acatgtatggg cagccaggct ctgggctgtc ccactagagc agctgcaaac 420  
 acagccatgtt ttcagtg 437

<210> 22  
 <211> 355  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> (17)

<220>  
 <221> unsure  
 <222> (27)

<220>

<221> unsure  
<222> (29)

<220>  
<221> unsure  
<222> (30)

<220>  
<221> unsure  
<222> (91)

<220>  
<221> unsure  
<222> (105)

<220>  
<221> unsure  
<222> (113)

<220>  
<221> unsure  
<222> (179)

<220>  
<221> unsure  
<222> (187)

<220>  
<221> unsure  
<222> (190)

<220>  
<221> unsure  
<222> (212)

<220>  
<221> unsure  
<222> (244)

<220>  
<221> unsure  
<222> (308)

<220>  
<221> unsure  
<222> (311)

<220>  
<221> unsure  
<222> (318)

<220>  
<221> unsure  
<222> (320)

<220>  
<221> unsure  
<222> (321)

```

<220>
<221> unsure
<222> (323)

<220>
<221> unsure
<222> (325)

<220>
<221> unsure
<222> (326)

<220>
<221> unsure
<222> (327)

<220>
<221> unsure
<222> (329)

<220>
<221> unsure
<222> (330)

<220>
<221> unsure
<222> (344)

<220>
<221> unsure
<222> (348)

<220>
<221> unsure
<222> (350)

<220>
<221> unsure
<222> (352)

<400> 22
caagctggct tctgttnaga tgagctncnn ggagatgcta ctgcattggca caggaagaac 60
gtgtgaccac taggattatt tccagcataa ntggcttgc atggntgaag ttntagcaat 120
gaatttctat aagcccttt aaaattggaa ttcataaaaca agtctctgtg ctctcacccnt 180
gtggcanttn tttctgctt ttttgtttn tattgtgtt ctcactgcta cctagcttagc 240
atcnctggtgt catgaaagtg gaccagatat tttcacaccc attatattct agatgctgtg 300
ttaagatnca ngacaacnan ntngnnncnn gatgtaaaat ttntagnncn gnagg 355

<210> 23
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Synthetic

<400> 23
ccagagccca aatcttgtga c

```

<210> 24  
<211> 20  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 24  
gcggctttgt cttggcattta

20

<210> 25  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 25  
attgccatcc cagtgacagt g

21

<210> 26  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 26  
ttgggagatg tgggtgatga g

21

<210> 27  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 27  
cctgccctgg tatgttttc tt

22

<210> 28  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 28

cagcccacaa atgccttcta c

<210> 29  
<211> 24  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: Synthetic  
  
<400> 29  
ccactaggat tatttccagc ataa

<210> 30  
<211> 24  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: Synthetic  
  
<400> 30  
ggtgtgaaaa tatctggtcc actt

<210> 31  
<211> 18  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: Synthetic  
  
<400> 31  
agccattgcc atcccagt

<210> 32  
<211> 20  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: Synthetic  
  
<400> 32  
atgttcttca cgctcttcgc

<210> 33  
<211> 24  
<212> DNA  
<213> Artificial Sequence  
  
<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 33  
aggaagtgct ggaagaggct ggct 24

<210> 34  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 34  
aaggaggcac cgtggagaa 19

<210> 35  
<211> 19  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 35  
agggctggat gacttggga 19

<210> 36  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: Synthetic

<400> 36  
ttcccaactc taaccccacc cacg 24

<210> 37  
<211> 7444  
<212> DNA  
<213> Homo sapiens

<400> 37  
gtctccctcg gatcttaact actgagcgca atgctgagcc atggagccgg gttggcccttg 60  
tggatcacac tgagcctgct gcagactgga ctggcgagc cagagagatg taactcacc 120  
ctggcgagt ccaaggcctc cagccatttc gtgtctatcc agtggagaat tttgggctca 180  
ccctgttaact tttagcctcat ctatagcgt gacaccctgg gggccgcgtt gtgccctacc 240  
tttcggatag acaacaccac atacggatgt aaccttcaag attacaagc aggaaccatc 300  
tataacttca ggatttttc tctggatgaa gagagaacag tggcttgca aacagatcct 360  
ttacccctcg cttaggttgg agtcagtaaa gagaagacga cttcaaccag cttgcattgtt 420  
tggtgactc cttcttcgg aaaagtccacc tcataatgagg tccaattatt tgatgaaaat 480  
aacaaaaaga tacaggggt tcaaattcaa gaaagtactt catggaatga atacacttt 540  
ttcaatctca ctgctggtag taaatacaat attgccatca cagctgttcc tggaggaaaa 600  
cgttttttt cagtttatac caatggatca acagtccat cttccagtgaa agatatttgtt 660  
atttccacaa aagccaaatc tctccctgatt tcctggcccc atggttctgg gaatgtggaa 720  
cgataccggc tgatgcta atgataaaggg atcctagttc atggcggtgt tggacaaa 780

catgtctactt cctatgcttt tcacgggctg tcccctggct acctctacaa cctcaactgtt 840  
atgactgagg ctgcagggct gcaaaaactac aggtggaaac tagtcaggac agccccatg 900  
gaagtctcaa atctgaaggt gacaatgat ggcagtttg cctctctaaa agtcaaattgg 960  
caaagaccc tcggaaatgt ggattttac aatatcaccc tgctcacaag aggaccatc 1020  
aaggaatcca gaggatttc accttggatt actgaaactc actttaaga gttagcccc 1080  
ggtcgactt atcaagttac tgtcagctgt gtctctggtg aactgtctgc tcagaagatg 1140  
gcagtgccca gaacatttcc agacaaaagtt gcaaacctgg aggcaacaa taatggcagg 1200  
atgaggtctc ttgttagtgg ctggcgccc cctgctggag actgggagca gtatcgatc 1260  
ctactcttca atgattctgt ggtgcgtc aacatcactg tggaaagga agaaacacag 1320  
tatgtcatgg atgacacggg gtcgtaccg ggaagacagt atgaggtgg agtcattgtt 1380  
gagagtggaa atttgaagaa ttctgagcgt tgccaggca ggacagtccc cctggctgtc 1440  
ctccagctt cgtcaaaaca tgccaaatgaa acctcactgat gtatcatgtg gcagacccct 1500  
gtagcagaat gggagaaata catcattcc ctagctgaca gagacctt actgatccac 1560  
aagtcaactt ccaaagatgc caaagaattt acttttactg acctggtgcc tggacgaaaa 1620  
tacatggcta cagtcaccag tattatggaa gacttaaaaa attccttcc agtaaaagga 1680  
agaacagtgc ctggccaaagt gactgactt catgtggca accaaggaat gaccagtagt 1740  
ctgtttacta actggaccca ggcacaagga gacgtagaat ttaccaagt cttactgatc 1800  
catgaaaatg tggtcattaa aaatgaaagc atctccagtg agaccagcag atacagcttc 1860  
cactctctca agtccggcag cctgtactcc gtgggtgtaa caacagttag tggagggatc 1920  
tcttcccgac aagtgggttgg ggagggaaaga acagttccctt ccagtgttag tggagtaacg 1980  
gtgaacaatt ccggtcgtaa tgactacctc agcgtttctt ggctcggtgc gcccggagat 2040  
gtggataact atgaggttaac attgtctcat gacggcaagg tggtcagtc cttgtcatt 2100  
gccaagtctg tcagagaatg ttccctcagc tccctcaccct cagggccctt ctacaccgtg 2160  
accataacta caaggagtgg caagtatgaa aatcactctt tcagccaaga gggacagatg 2220  
cctgacaaag tccaggagat cagtgttagc aactcagccca ggagtgacta tttaaaggta 2280  
tcctgggtgt atgcccactgg agactttgat cactatgaa tcaccattaa aaacaaaaac 2340  
aacttcattc aaactaaaag cattcccaag tcagaaaacg aatgtgtatt tggcagacta 2400  
gtccctggac ggttgtacag tgcactgtt actacaaaaa gtggacataa tgaaggccat 2460  
gaacaaggga atgggagaac aattccagag cctgttaagg atctaaccatt ggcacacagg 2520  
agcaactgagg acttgcattgt gacttggta ggagctaattt gggatgtcgaa ccaatatgag 2580  
atccagctgc tttcaatgaa catgaaaagta ttccctcctt ttccacccat aaataccgca 2640  
accgagatcc gatttacttc cctaaacacca ggccgcaat acaaatttct tgcactgtac 2700  
attagccccat atgtacagca gtcagccccc attgagggtc tcacagttcc tagtgcgtc 2760  
aaaaatattc acatttctcc caatggagca acagatagcc tgacggtgaa ctggactcc 2820  
ggtgggggag acgttggattt ctacacgggt tcggcattca ggacagtcgaa aaggttgac 2880  
tctcagacta ttcccaagca cgtctttgag cacacgttcc acagactggaa ggcgggggag 2940  
cagtagccaa tcatgatttc ctcagtcagc ggttccctga agaatcagat aaatgtgggt 3000  
ggccggacag ttccagcatc tgcactggaa gtaattgcag acaatgcata cagcagttat 3060  
tccttaatag taagttggca aaaagctgtt ggtgtggcag aaagatatgaa tattcctgtt 3120  
ctaactgaaa atgaaatct tctgcgcaac acatcagagc cagccaccac taagcaacac 3180  
aaatttgaag atctaacacc aggcaagaaaa tacaagatac agatcctaaat tgcactgtga 3240  
ggcctctta gcaaggaagc ccagactgaa ggccgaacacg tcccagcagc tgcacccgac 3300  
ctgaggatca cagagaactc caccaggcac ctgtccttcc gctggaccgc ctcagagggg 3360  
gagctcagct ggtacaacat cttttgtac aacctcagat ggaatctcca ggagagagct 3420  
caagttgacc cactagtcca gagcttctct ttccagaact tgctacaagg cagaatgtac 3480  
aagatggta ttgtactca cagtgggggag ctgtctaattt agtctttcat atttggtaga 3540  
acagtcccac cctctgttag tcatctcagg gggtccaatc ggaacacgcg agacagcctt 3600  
tggttcaact ggagtccagc ctctggggac tttgactttt atgagctgtat tctctataat 3660  
cccaatggca caaagaaggaa aaactggaaa gacaaggacc tgacggagtg gcggttcaa 3720  
ggccttggtc ctggaaaggaa gtacgtctgc tgggtggtaa ctcacagtgaa gatctcagc 3780  
aataaaagtca cagcggagag cagaacagct ccaagtccctc ccagtcttataat gtcatttgc 3840  
gacattgcaa acacatcctt ggccatcagc tggaaaggggc ccccagactg gacagactac 3900  
aacgactttg agctgcagtg gttgcccaga gatgcactt ctgtcttcaaa cccctacaac 3960  
aacagaaaaat cagaaggacg cattgtgtat ggtcttcgtc cagggagatc ctatcaattc 4020  
aacgtcaaga ctgtcagtg tggatccctgg aaaacttaca gcaaaccat ttttggatct 4080  
gtgaggacaa agcctgacaa gataaaaaac ctgcattgcc ggcctcagaa ctccacggcc 4140  
attgcctgtt cttggatccc tcctgattct gactttgtat gttatagtagt tgaatggcc 4200  
aaaatggaca ccaagaagt tgagtttcc agaaagctgg agaaagaaaa atctctgtc 4260  
aacatcatga tgcttagtgg ccataagagg tacctgggtt ccatcaaaat gcagtcggcc 4320

ggcatgacca gcggagggtgg tgaagacacgc actatcacaa tgatagaccg cccccccctc 4380  
ccaccccccac acattcgtgt gaatgaaaag gatgtgctaa ttagcaagtc ttccatcaac 4440  
tttactgtca actgcagctg gttcagcgac accaatggag ctgtgaaata cttcacagtg 4500  
gtggtgagag aggctgatgg cagtgatgag ctgaagccag agcagcagca ccctctccct 4560  
tcctacctgg agtacaggca caatgcctcc attcgggtgt atcagactaa ttatTTTGC 4620  
agcaaattgtg ccgaaaaatcc taacagcaac tccaagagtt ttaacattaa gcttggagca 4680  
gagatggaga gccttaggtgg aaaatgcgt cccactcagc aaaaattctg tgatggacca 4740  
ctgaagccac acactgccta cagaatcagc attcgagctt ttacacagct ctttgatgag 4800  
gacactgaagg aattcacaac gccactctat tcagacacat tttttctt acccatcact 4860  
actgaatcag agcccttgtt tggagctatt gaaggtgtga gtgtctggct gtttttaatt 4920  
ggcatgttag tggtgttgtt tgccttattt atctgcagac agaaagttag ccatggtcga 4980  
gaaagaccct ctggccgtt gggatcgac cattatctgt ccacttaaac 5040  
ctggccaga aaggtaaccc gaaaacttct tggccaataa aaataaatca gtttgaaggg 5100  
catttcatga agtacaggc tgactccaac taccttctat ccaaggaata cgaggagtt 5160  
aaagacgtgg gccgaaacca gtcatgtac attgcactct tgccggagaa tagagggaaa 5220  
aatcgatatac acaatataattt gcccttatgtat gccacgcgag tgaagctctc caatgttagat 5280  
gatgatcctt gctctgacta catcaatgcc agctacatcc ctggcaacaa cttcagaaga 5340  
gaatacattt tcaactcaggg accgcttctt ggcaccaagg atgacttctg gaaaatggtg 5400  
tgggaacaaa acgttcacaa catgtcatg gtgaccctgt gtgttgagaa gggccgagta 5460  
aagtgtgacc attactggcc agcggaccag gatccctt actatgggg cctcatcctg 5520  
cagatgtctt cagagtccgt cctgcttag tggaccatcc gggagttaa gatatgcgtt 5580  
gaggaacage ttgatgcaca cagactcatc cgccacttcc actatacggt gtggccagac 5640  
catggagtcc cagaaaccac ccagttctgtt atccagttt tgagaactgt cagggactac 5700  
atcaacagaa gcccgggtgc tggggccact gtggtgcaact gcaactgtgg tggggtagg 5760  
actggAACCT ttattgcatt ggacccaatc ctccagcagt tagactccaa agactctgt 5820  
gacattttt gggcgtgca cgacctaaga cttcacaggg ttacatgggt ccagactgag 5880  
tgtcagttt ttcacctaca tcagttgtgt agagatgtcc tcaagcaag aaagctacgg 5940  
agtgaacaag aaaacccctt gtttccaatc tatgaaaatg tgaatccaga gtatcacaga 6000  
gatccagtct attcaaggca ttgagaatgt acctgaagag ctctggata aaaattttc 6060  
actgtgtgtt ttgtttttaa aaacttgcctt catgcccatac agaggtgcca gctatttctg 6120  
ttgataactat gtataattt ttaatctggta gaatgtttaa aattttatat aattttaaagg 6180  
taacagatat tattgtacat agttgtat ttttctacact gtttctacact gtttggat ttttcttcc 6240  
ataatgtta atattaagct ttatataata ctattttcc acactaaagt gttcatgact 6300  
tgttctacat aaaactaattt caacctgtat gacaggacta ctggtaaaat gcatatggag 6360  
gtggtggcag agacaatcct tcaggccatg ttttctacact gtttggat ttttcttcc 6420  
ggaaaaaggc cagggtctaga gagagcaaat actatggcta gatttgcgtc attgtgtcc 6480  
catgaatctc gagagccaaac agacatgtcc taacttgcata ttaggacaaa tgtgacagtc 6540  
aaaaaaaaaggc tttagagggag ggagaaaaaa gaattaagca gtaccaaaagc tgaacttagat 6600  
gcttgtgtct gaacttagtt ctctctctt ccttctcttcc tccagggtt caagccaaag 6660  
tggtcagctc agggatcatg taacttgcag tgcaagccca ggttggtagg atgcagggtt 6720  
gagggttctg atagagaatg attccaaaca gaagtgtatga attccttttgc ttaataagat 6780  
gccagctata cccagactgg aaacataaca tgcaaaagcac tatctacagt gatttagagat 6840  
ccttcatgtt cattcatgtt gtggagtgtg aacatccaca cccataactgt aatgtattt 6900  
tacacactag tttctgtctc attttcagtg gtctccatc ttagaaaaat cacaattatc 6960  
cattcctact tgatttcca taaaagaat attatggtag cagattgtgc ccctcattaa 7020  
aaggcttaat gccaacatatt tcataaaaaat gactacaaac atcatatata gtaaaatttt 7080  
aaacaatagc aaaaacaaaaa acagtggctc tcagtaaaaat tttcaaaact tcttttagta 7140  
aatcaatgaa gtcaaaatgt caagtaatca cccaaagttg catttaataa caaaaggcac 7200  
tacatactgtt accaagtttca ttttcaatatt ttgtgccttta cttactttga ctataacaaa 7260  
ttccaaatgtt tcaagaaatg tttccttcat caaggtccag ttccgacagc attcctggga 7320  
aaaatttggaa aggagttgtt acggaatctt catagatacc tgagaagatg agctggagat 7380  
gtttgcctt ttcacactac aaattttctt gtaataaaact tggaaattag aggtcaaaaaa 7440  
aaaa

<210> 38  
<211> 2475  
<212> DNA  
<213> *Homo sapiens*

<220>  
<221> unsure  
<222> (1001)

<220>  
<221> unsure  
<222> (1011)

<400> 38  
atcacctgca tcctcgagga cagacccgtt gaagtcagag ctgctacaca ttgaatctca 60  
agtgcagctt ctgagattcg atgattcagg aagaaaggat tctggaggttt tgaagaaaa 120  
tgcagtgAAC agcaaccaat ccaatgttgt aattgaagac ttggagtcc cacggatctc 180  
ttcgtcttgc cagcgttagcc cgagtcggc agcggccggag gacctcagca gccatgtcga 240  
agccccatag tgaagccggg actgccttca ttcagaccca gcagctgcac gcagccatgg 300  
ctgacacatt cctggagcac atgtgccgg tggacattga ttcaaccaccc atcacagccc 360  
ggaacactgg catcatctgt accattggc ccagcttccc gatcagtggaa gacgttgaag 420  
gagatgataa gtctggaatg aatgtggctc gtctgaattc tctcatggac tcatgagta 480  
catgcggaga ccatcaagaaa tgtgcgcaca gcccacggaaa gctttgcttc tgacccatc 540  
ctctaccggc ccgttgcgtgt ggctctagac actaaaggac ctgagatccg aactgggctc 600  
atcaaggggca gccggactgc agagggtggag ctgaagaagg gaggccactct caaaatcagc 660  
ctggataaacg cctacatggaa aaagtgtgac gagaacatcc tggctggcttca ctacaagaac 720  
atctgcaagg tgggtggaaatg gggcagcaag atctacgtgg atgatgggct tattttctctc 780  
caggtgaagc agaaaagggtgc cgacttcctg gtgacggagg tggaaaatgg tggctcttg 840  
ggcagcaaga agggtgtgaa ctttcttggg gctgctgtgg acttgcctgc tggctggag 900  
aaggacatcc caggatctga aagtttgggg gtcgagcagg atgatgtatg ggtgttggc 960  
gtcattccat cccgcaaagg catctggatg tcccatggaa ngtttaggaa nggtctggg 1020  
gagagaaggg aaaagaaaca tccaagatta tccagcaaaa tcgagaatca tgaggggggtt 1080  
cgagggtttg atgaaaatct ggaggccagt gatgggatca tggctggctcg tggatctca 1140  
ggcattgaga ttcttcgaga gaaggtcttc ttgctcagaa gatgatgatt ggacgggtc 1200  
acccgagact gggaaaggctg tcatactgtgc tactccagat gctggagagc atcgatcaag 1260  
aagcccccc ccactcgggc tgaaggcagt gatgtggcca atgcagtcc ggtatggagcc 1320  
gactgcatac tgctgtctgg agaaacagcc aaaggggact atccctctgga ggctgtgcgc 1380  
atgcagcacc tgattgccc tgaggcagag gctgccatct accacttgca attatttgag 1440  
gaactccgccc gcctggcggc cattaccagc gaccccccacag aagccaccgc cgtgggtgcc 1500  
gtggaggcct cttcaagtg ctgcagtgaa gccataatcg tcctcaccaa gtctggcagg 1560  
tctgctcacc aggtggccag ataccggcca cgtgccccca tcattgtctg gacccggaaat 1620  
ccccagacag ctgcgtcaggc ccacccgtac cgtggcatct tcctctgtcgt gtgcaggac 1680  
ccagttcagg aggcctggc tgaggacgtg gaccccccggg tgaactttgc catgaatgtt 1740  
ggcaaggccc gaggcttctt caagaaggaa gatgtggtca ttgtgtcgac cggatggcgc 1800  
cctggctccg gttcacccaa caccatgcgt gttgttccctg tgccgtatg gaccccgag 1860  
ccccctctcc agccccctgc ccacccctt cccccccagccc atccatttagg ccagcaacgc 1920  
ttgtagaact cactctggc tgtaacgtgg cactggtagg ttgggacacc agggaaagaag 1980  
atcaacgcct cactgaaaca tggctgtgtt tgcaagcttc tcttagtggga cagcccaagag 2040  
cctggctgcc catcatgtgg ccccaacccaa tcaagggaaag aaggaggaat gctggactgg 2100  
aggccccctgg agccagatgg caagagggtg acagcttccct tcctctgtgt tactctgtcc 2160  
agttccctta gaaaaaatgg atgcccagag gactcccaac cctggcttgg ggtcaagaaaa 2220  
cagccagcaa gagtttagggg ctttagggca ctgggctgtt gttccattga agccgactct 2280  
ggccctggcc cttacttgc tctctagctc tctaggcctc tccagtttgc acctgtcccc 2340  
accctccact cagctgtcct gcagcaaaca ctccaccctc caccttccat ttccccccac 2400  
tactgcagca cttccaggcc tggctgtata gaggcttaccc gatgtcaat aaacaacagc 2460  
tgaagcacca aaaaaaa 2475

<210> 39  
<211> 436  
<212> PRT  
<213> *Homo sapiens*

31

<400> 39  
Glu Trp Ile Ser Tyr Ile Arg Gly Gly Glu Arg Ile Tyr Tyr Ala  
1 5 10 15  
Asp Ser Val Arg Gly Arg Phe Thr Val Ser Arg Asp Asn Ala Lys Asn  
20 25 30  
Ser Leu Tyr Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val  
35 40 45  
Tyr Phe Cys Ala Arg Glu Pro Pro Ala Pro Asn Tyr Phe Asp Cys Trp  
50 55 60  
Ser Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro  
65 70 75 80  
Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Gly Gly Thr  
85 90 95  
Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr  
100 105 110  
Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro  
115 120 125  
Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr  
130 135 140  
Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Thr Cys Asn Val Asn  
145 150 155 160  
His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu Leu Lys Thr  
165 170 175  
Pro Leu Gly Asp Thr Thr His Thr Cys Pro Arg Cys Pro Glu Pro Lys  
180 185 190  
Ser Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys Pro Glu Pro Lys  
195 200 205  
Cys Asp Thr Pro Pro Pro Cys Pro Arg Cys Pro Ala Pro Glu Leu Leu  
210 215 220  
Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu  
225 230 235 240  
Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp Val Ser  
245 250 255  
His Glu Asp Pro Glu Val Gln Phe Lys Trp Tyr Val Asp Gly Val Glu  
260 265 270  
Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr  
275 280 285  
Phe Arg Val Val Ser Val Leu Thr Val Leu His Gln Asp Trp Leu Asn  
290 295 300  
Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala Leu Pro Ala Pro

305

310

315

320

Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu Pro Gln  
 325 330 335

Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn Gln Val  
 340 345 350

Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val  
 355 360 365

Glu Trp Glu Ser Ser Gly Gln Pro Glu Asn Asn Tyr Asn Thr Thr Pro  
 370 375 380

Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr  
 385 390 395 400

Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Ile Phe Ser Cys Ser Val  
 405 410 415

Met His Glu Ala Leu His Asn Arg Phe Thr Gln Lys Ser Leu Ser Leu  
 420 425 430

Ser Pro Gly Lys  
 435

&lt;210&gt; 40

&lt;211&gt; 168

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 40

Pro Gln Leu Ala Cys Leu Phe Gln Val Lys Ser Gly Ser Pro Ala Val  
 1 5 10 15

Leu Ala Phe Ala Lys Glu Lys Ser Phe Gly Trp Pro Ser Phe Ile Thr  
 20 25 30

Tyr Thr Val Gly Val Ser Asp Pro Ala Ala Gly Ser Gln Gly Pro Leu  
 35 40 45

Ser Thr Thr Leu Thr Phe Ser Ser Pro Val Thr Asn Gln Ala Ile Ala  
 50 55 60

Ile Pro Val Thr Val Ala Phe Val Met Asp Arg Arg Gly Pro Gly Pro  
 65 70 75 80

Tyr Gly Ala Ser Leu Phe Gln His Phe Leu Asp Ser Tyr Gln Val Met  
 85 90 95

Phe Phe Thr Leu Phe Ala Leu Ala Gly Thr Ala Val Met Ile Ile  
 100 105 110

Ala Tyr His Thr Val Cys Thr Pro Arg Asp Leu Ala Val Pro Ala Ala  
 115 120 125

Leu Thr Pro Arg Ala Ser Pro Gly His Ser Pro His Tyr Phe Ala Ala  
 130 135 140

Ser Ser Pro Thr Ser Pro Asn Ala Leu Pro Pro Ala Arg Lys Ala Ser  
 145 150 155 160

Pro Pro Ser Gly Leu Trp Ser Pro  
 165

<210> 41  
 <211> 78  
 <212> PRT  
 <213> Homo sapiens

<400> 41  
 Val Ser Glu Gly Ala Thr Trp Ala Ile Gly Phe Pro Ala Ser Phe Pro  
 1 5 10 15

Leu Phe Leu Ala Pro Ala Ala Glu Ala Gly Arg Pro Trp Arg Thr Ser  
 20 25 30

Trp Gly Leu Thr Ala Ala Ser Pro Gly Ser Ser Trp Gly His Leu Ser  
 35 40 45

Ser Lys Val Cys Thr Gln Glu Val Pro His His Ile Gln Pro His Gly  
 50 55 60

Ser Pro Arg Ser Ala Arg Gln Gln Ile Arg Ala Pro Cys His  
 65 70 75

<210> 42  
 <211> 1118  
 <212> PRT  
 <213> Homo sapiens

<400> 42  
 Met Ala Arg Ser Pro Gly Arg Ala Tyr Ala Leu Leu Leu Leu Ile  
 1 5 10 15

Cys Phe Asn Val Gly Ser Gly Leu His Leu Gln Val Leu Ser Thr Arg  
 20 25 30

Asn Glu Asn Lys Leu Leu Pro Lys His Pro His Leu Val Arg Gln Lys  
 35 40 45

Arg Ala Trp Ile Thr Ala Pro Val Ala Leu Arg Glu Gly Glu Asp Leu  
 50 55 60

Ser Lys Lys Asn Pro Ile Ala Lys Ile His Ser Asp Leu Ala Glu Glu  
 65 70 75 80

Arg Gly Leu Lys Ile Thr Tyr Lys Tyr Thr Gly Lys Gly Ile Thr Glu  
 85 90 95

Pro Pro Phe Gly Ile Phe Val Phe Asn Lys Asp Thr Gly Glu Leu Asn  
 100 105 110

Val Thr Ser Ile Leu Asp Arg Glu Glu Thr Pro Phe Phe Leu Leu Thr  
 115 120 125

Gly Tyr Ala Leu Asp Ala Arg Gly Asn Asn Val Glu Lys Pro Leu Glu  
 130 135 140

Leu Arg Ile Lys Val Leu Asp Ile Asn Asp Asn Glu Pro Val Phe Thr  
 145 150 155 160

Gln Asp Val Phe Val Gly Ser Val Glu Glu Leu Ser Ala Ala His Thr  
 165 170 175

Leu Val Met Lys Ile Asn Ala Thr Asp Ala Asp Glu Pro Asn Thr Leu  
 180 185 190

Asn Ser Lys Ile Ser Tyr Arg Ile Val Ser Leu Glu Pro Ala Tyr Pro  
 195 200 205

Pro Val Phe Tyr Leu Asn Lys Asp Thr Gly Glu Ile Tyr Thr Thr Ser  
 210 215 220

Val Thr Leu Asp Arg Glu Glu His Ser Ser Tyr Thr Leu Thr Val Glu  
 225 230 235 240

Ala Arg Asp Gly Asn Gly Glu Val Thr Asp Lys Pro Val Lys Gln Ala  
 245 250 255

Gln Val Gln Ile Arg Ile Leu Asp Val Asn Asp Asn Ile Pro Val Val  
 260 265 270

Glu Asn Lys Val Leu Glu Gly Met Val Glu Glu Asn Gln Val Asn Val  
 275 280 285

Glu Val Thr Arg Ile Lys Val Phe Asp Ala Asp Glu Ile Gly Ser Asp  
 290 295 300

Asn Trp Leu Ala Asn Phe Thr Phe Ala Ser Gly Asn Glu Gly Gly Tyr  
 305 310 315 320

Phe His Ile Glu Thr Asp Ala Gln Thr Asn Glu Gly Ile Val Thr Leu  
 325 330 335

Ile Lys Glu Val Asp Tyr Glu Glu Met Lys Asn Leu Asp Phe Ser Val  
 340 345 350

Ile Val Ala Asn Lys Ala Ala Phe His Lys Ser Ile Arg Ser Lys Tyr  
 355 360 365

Lys Pro Thr Pro Ile Pro Ile Lys Val Lys Val Lys Asn Val Lys Glu  
 370 375 380

Gly Ile His Phe Lys Ser Ser Val Ile Ser Ile Tyr Val Ser Glu Ser  
 385 390 395 400

Met Asp Arg Ser Ser Lys Gly Gln Ile Ile Gly Asn Phe Gln Ala Phe  
 405 410 415

Asp Glu Asp Thr Gly Leu Pro Ala His Ala Arg Tyr Val Lys Leu Glu  
 420 425 430

Asp Arg Asp Asn Trp Ile Ser Val Asp Ser Val Thr Ser Glu Ile Lys

435

440

445

Leu Ala Lys Leu Pro Asp Phe Glu Ser Arg Tyr Val Gln Asn Gly Thr  
450 455 460

Tyr Thr Val Lys Ile Val Ala Ile Ser Glu Asp Tyr Pro Arg Lys Thr  
465 470 475 480

Ile Thr Gly Thr Val Leu Ile Asn Val Glu Asp Ile Asn Asp Asn Cys  
485 490 495

Pro Thr Leu Ile Glu Pro Val Gln Thr Ile Cys His Asp Ala Glu Tyr  
500 505 510

Val Asn Val Thr Ala Glu Asp Leu Asp Gly His Pro Asn Ser Gly Pro  
515 520 525

Phe Ser Phe Ser Val Ile Asp Lys Pro Pro Gly Met Ala Glu Lys Trp  
530 535 540

Lys Ile Ala Arg Gln Glu Ser Thr Ser Val Leu Leu Gln Gln Ser Glu  
545 550 555 560

Lys Lys Leu Gly Arg Ser Glu Ile Gln Phe Leu Ile Ser Asp Asn Gln  
565 570 575

Gly Phe Ser Cys Pro Glu Lys Gln Val Leu Thr Leu Thr Val Cys Glu  
580 585 590

Cys Leu His Gly Ser Gly Cys Arg Glu Ala Gln His Asp Ser Tyr Val  
595 600 605

Gly Leu Gly Pro Ala Ala Ile Ala Leu Met Ile Leu Ala Phe Leu Leu  
610 615 620

Leu Leu Leu Val Pro Leu Leu Leu Met Cys His Cys Gly Lys Gly  
625 630 635 640

Ala Lys Gly Phe Thr Pro Ile Pro Gly Thr Ile Glu Met Leu His Pro  
645 650 655

Trp Asn Asn Glu Gly Ala Pro Pro Glu Asp Lys Val Val Pro Ser Phe  
660 665 670

Leu Pro Val Asp Gln Gly Gly Ser Leu Val Gly Arg Asn Gly Val Gly  
675 680 685

Gly Met Ala Lys Glu Ala Thr Met Lys Gly Ser Ser Ser Ala Ser Ile  
690 695 700

Val Lys Gly Gln His Glu Met Ser Glu Met Asp Gly Arg Trp Glu Glu  
705 710 715 720

His Arg Ser Leu Leu Ser Gly Arg Ala Thr Gln Phe Thr Gly Ala Thr  
725 730 735

Gly Ala Ile Met Thr Thr Glu Thr Thr Lys Thr Ala Arg Ala Thr Gly  
740 745 750

Ala Ser Arg Asp Met Ala Gly Ala Gln Ala Ala Ala Val Ala Leu Asn  
 755 760 765

Glu Glu Phe Leu Arg Asn Tyr Phe Thr Asp Lys Ala Ala Ser Tyr Thr  
 770 775 780

Glu Glu Asp Glu Asn His Thr Ala Lys Asp Cys Leu Leu Val Tyr Ser  
 785 790 795 800

Gln Glu Glu Thr Glu Ser Leu Asn Ala Ser Ile Gly Cys Cys Ser Phe  
 805 810 815

Ile Glu Gly Glu Leu Asp Asp Arg Phe Leu Asp Asp Leu Gly Leu Lys  
 820 825 830

Phe Lys Thr Leu Ala Glu Val Cys Leu Gly Gln Lys Ile Asp Ile Asn  
 835 840 845

Lys Glu Ile Glu Gln Arg Gln Lys Pro Ala Thr Glu Thr Ser Met Asn  
 850 855 860

Thr Ala Ser His Ser Leu Cys Glu Gln Thr Met Val Asn Ser Glu Asn  
 865 870 875 880

Thr Tyr Ser Ser Gly Ser Ser Phe Pro Val Pro Lys Ser Leu Gln Glu  
 885 890 895

Ala Asn Ala Glu Lys Val Thr Gln Glu Ile Val Thr Glu Arg Ser Val  
 900 905 910

Ser Ser Arg Gln Ala Gln Lys Val Ala Thr Pro Leu Pro Asp Pro Met  
 915 920 925

Ala Ser Arg Asn Val Ile Ala Thr Glu Thr Ser Tyr Val Thr Gly Ser  
 930 935 940

Thr Met Pro Pro Thr Thr Val Ile Leu Gly Pro Ser Gln Pro Gln Ser  
 945 950 955 960

Leu Ile Val Thr Glu Arg Val Tyr Ala Pro Ala Ser Thr Leu Val Asp  
 965 970 975

Gln Pro Tyr Ala Asn Glu Gly Thr Val Val Val Thr Glu Arg Val Ile  
 980 985 990

Gln Pro His Gly Gly Ser Asn Pro Leu Glu Gly Thr Gln His Leu  
 995 1000 1005

Gln Asp Val Pro Tyr Val Met Val Arg Glu Arg Glu Ser Phe Leu Ala  
 1010 1015 1020

Pro Ser Ser Gly Val Gln Pro Thr Leu Ala Met Pro Asn Ile Ala Val  
 1025 1030 1035 1040

Gly Gln Asn Val Thr Val Thr Glu Arg Val Leu Ala Pro Ala Ser Thr  
 1045 1050 1055

Leu Gln Ser Ser Tyr Gln Ile Pro Thr Glu Asn Ser Met Thr Ala Arg  
 1060 1065 1070

Asn Thr Thr Val Ser Gly Ala Gly Val Pro Gly Pro Leu Pro Asp Phe  
 1075 1080 1085

Gly Leu Glu Glu Ser Gly His Ser Asn Ser Thr Ile Thr Thr Ser Ser  
 1090 1095 1100

Thr Arg Val Thr Lys His Ser Thr Val Gln His Ser Tyr Ser  
 1105 1110 1115

<210> 43

<211> 97

<212> PRT

<213> Homo sapiens

<400> 43

Met Thr Lys Gly Thr Ser Ser Phe Gly Lys Arg Arg Asn Lys Thr His  
 1 5 10 15

Thr Leu Cys Arg Arg Cys Gly Ser Lys Ala Tyr His Leu Gln Lys Ser  
 20 25 30

Thr Cys Gly Lys Cys Gly Tyr Pro Ala Lys Arg Lys Arg Lys Tyr Asn  
 35 40 45

Trp Ser Ala Lys Ala Lys Arg Arg Asn Thr Thr Gly Thr Gly Arg Met  
 50 55 60

Arg His Leu Lys Ile Val Tyr Arg Arg Phe Arg His Gly Phe Arg Glu  
 65 70 75 80

Gly Thr Thr Pro Lys Pro Lys Arg Ala Ala Val Ala Ala Ser Ser Ser  
 85 90 95

Ser

<210> 44

<211> 889

<212> PRT

<213> Homo sapiens

<400> 44

Met Ala Ala Ala Val Gly Val Arg Gly Arg Tyr Glu Leu Pro Pro Cys  
 1 5 10 15

Ser Gly Pro Gly Trp Leu Leu Ser Leu Ser Ala Leu Leu Ser Val Ala  
 20 25 30

Ala Arg Gly Ala Phe Ala Thr Thr His Trp Val Val Thr Glu Asp Gly  
 35 40 45

Lys Ile Gln Gln Gln Val Asp Ser Pro Met Asn Leu Lys His Pro His  
 50 55 60

Asp Leu Val Ile Leu Met Arg Gln Glu Ala Thr Val Asn Tyr Leu Lys  
 65 70 75 80

Glu Leu Glu Lys Gln Leu Val Ala Gln Lys Ile His Ile Glu Glu Asn  
 85 90 95  
 Glu Asp Arg Asp Thr Gly Leu Glu Gln Arg His Asn Lys Glu Asp Pro  
 100 105 110  
 Asp Cys Ile Lys Ala Lys Val Pro Leu Gly Asp Leu Asp Leu Tyr Asp  
 115 120 125  
 Gly Thr Tyr Ile Thr Leu Glu Ser Lys Asp Ile Ser Pro Glu Asp Tyr  
 130 135 140  
 Ile Asp Thr Glu Ser Pro Val Pro Pro Asp Pro Glu Gln Pro Asp Cys  
 145 150 155 160  
 Thr Lys Ile Leu Glu Leu Pro Tyr Ser Ile His Ala Phe Gln His Leu  
 165 170 175  
 Arg Gly Val Gln Glu Arg Val Asn Leu Ser Ala Pro Leu Leu Pro Lys  
 180 185 190  
 Glu Asp Pro Ile Phe Thr Tyr Leu Ser Lys Arg Leu Gly Arg Ser Ile  
 195 200 205  
 Asp Asp Ile Gly His Leu Ile His Glu Gly Leu Gln Lys Asn Thr Ser  
 210 215 220  
 Ser Trp Val Leu Tyr Asn Met Ala Ser Phe Tyr Trp Arg Ile Lys Asn  
 225 230 235 240  
 Glu Pro Tyr Gln Val Val Glu Cys Ala Met Arg Ala Leu His Phe Ser  
 245 250 255  
 Ser Arg His Asn Lys Asp Ile Ala Leu Val Asn Leu Ala Asn Val Leu  
 260 265 270  
 His Arg Ala His Phe Ser Ala Asp Ala Ala Val Val Val His Ala Ala  
 275 280 285  
 Leu Asp Asp Ser Asp Phe Phe Thr Ser Tyr Tyr Thr Leu Gly Asn Ile  
 290 295 300  
 Tyr Ala Met Leu Gly Glu Tyr Asn His Ser Val Leu Cys Tyr Asp His  
 305 310 315 320  
 Ala Leu Gln Ala Arg Pro Gly Phe Glu Gln Ala Ile Lys Arg Lys His  
 325 330 335  
 Ala Val Leu Cys Gln Gln Lys Leu Glu Gln Lys Leu Glu Ala Gln His  
 340 345 350  
 Arg Ser Leu Gln Arg Thr Leu Asn Glu Leu Lys Glu Tyr Gln Lys Gln  
 355 360 365  
 His Asp His Tyr Leu Arg Gln Gln Glu Ile Leu Glu Lys His Lys Leu  
 370 375 380  
 Ile Gln Glu Glu Gln Ile Leu Arg Asn Ile Ile His Glu Thr Gln Met

385	390	395	400
Ala Lys Glu Ala Gln Leu Gly Asn His Gln Ile Cys Arg Leu Val Asn			
405		410	415
Gln Gln His Ser Leu His Cys Gln Trp Asp Gln Pro Val Arg Tyr His			
420		425	430
Arg Gly Asp Ile Phe Glu Asn Val Asp Tyr Val Gln Phe Gly Glu Asp			
435		440	445
Ser Ser Thr Ser Ser Met Met Ser Val Asn Phe Asp Val Gln Ser Asn			
450		455	460
Gln Ser Asp Ile Asn Asp Ser Val Lys Ser Ser Pro Val Ala His Ser			
465		470	475
Ile Leu Trp Ile Trp Gly Arg Asp Ser Asp Ala Tyr Arg Asp Lys Gln			
485		490	495
His Ile Leu Trp Pro Lys Arg Ala Asp Cys Thr Glu Ser Tyr Pro Arg			
500		505	510
Val Pro Val Gly Gly Glu Leu Pro Thr Tyr Phe Leu Pro Pro Glu Asn			
515		520	525
Lys Gly Leu Arg Ile His Glu Leu Ser Ser Asp Asp Tyr Ser Thr Glu			
530		535	540
Glu Glu Ala Gln Thr Pro Asp Cys Ser Ile Thr Asp Phe Arg Lys Ser			
545		550	555
His Thr Leu Ser Tyr Leu Val Lys Glu Leu Glu Val Arg Met Asp Leu			
565		570	575
Lys Ala Lys Met Pro Asp Asp His Ala Arg Lys Ile Leu Leu Ser Arg			
580		585	590
Ile Asn Asn Tyr Thr Ile Pro Glu Glu Ile Gly Ser Phe Leu Phe			
595		600	605
His Ala Ile Asn Lys Pro Asn Ala Pro Ile Trp Leu Ile Leu Asn Glu			
610		615	620
Ala Gly Leu Tyr Trp Arg Ala Val Gly Asn Ser Thr Phe Ala Ile Ala			
625		630	635
Cys Leu Gln Arg Ala Leu Asn Leu Ala Pro Leu Gln Tyr Gln Asp Val			
645		650	655
Pro Leu Val Asn Leu Ala Asn Leu Leu Ile His Tyr Gly Leu His Leu			
660		665	670
Asp Ala Thr Lys Leu Leu Leu Gln Ala Leu Ala Ile Asn Ser Ser Glu			
675		680	685
Pro Leu Thr Phe Leu Ser Leu Gly Asn Ala Tyr Leu Ala Leu Lys Asn			
690		695	700

Ile Ser Gly Ala Leu Glu Ala Phe Arg Gln Ala Leu Lys Leu Thr Thr  
 705 710 715 720

Lys Cys Pro Glu Cys Glu Asn Ser Leu Lys Leu Ile Arg Cys Met Gln  
 725 730 735

Phe Tyr Pro Phe Leu Tyr Asn Ile Thr Ser Ser Val Cys Ser Gly Thr  
 740 745 750

Val Val Glu Glu Ser Asn Gly Ser Asp Glu Met Glu Asn Ser Asp Glu  
 755 760 765

Thr Lys Met Ser Glu Glu Ile Leu Ala Leu Val Asp Glu Phe Gln Gln  
 770 775 780

Ala Trp Pro Leu Glu Gly Phe Gly Gly Ala Leu Glu Met Lys Gly Arg  
 785 790 795 800

Arg Leu Asp Leu Gln Gly Ile Arg Val Leu Lys Lys Gly Pro Gln Asp  
 805 810 815

Gly Val Ala Arg Ser Ser Cys Tyr Gly Asp Cys Arg Ser Glu Asp Asp  
 820 825 830

Glu Ala Thr Glu Trp Ile Thr Phe Gln Val Lys Arg Val Lys Lys Pro  
 835 840 845

Lys Gly Asp His Lys Lys Thr Pro Gly Lys Lys Val Glu Thr Gly Gln  
 850 855 860

Ile Glu Asn Gly His Arg Tyr Gln Ala Asn Leu Glu Ile Thr Gly Pro  
 865 870 875 880

Lys Val Ala Ser Pro Gly Pro Gln Gly  
 885

<210> 45  
 <211> 690  
 <212> PRT  
 <213> Homo sapiens

<400> 45  
 Phe Leu Thr Leu Phe Ile Phe Arg Ser Gly Leu Cys Arg Gly Asn Ser  
 1 5 10 15

Val Glu Arg Lys Ile Tyr Ile Pro Leu Asn Lys Thr Ala Pro Cys Val  
 20 25 30

Arg Leu Leu Asn Ala Thr His Gln Ile Gly Cys Gln Ser Ser Ile Ser  
 35 40 45

Gly Asp Thr Gly Val Ile His Val Val Glu Lys Glu Glu Asp Leu Gln  
 50 55 60

Trp Val Leu Thr Asp Gly Pro Asn Pro Pro Tyr Met Val Leu Leu Glu  
 65 70 75 80

Ser Lys His Phe Thr Arg Asp Leu Met Glu Lys Leu Lys Gly Arg Thr

85

90

95

Ser Arg Ile Ala Gly Leu Ala Val Ser Leu Thr Lys Pro Ser Pro Ala  
100 105 110

Ser Gly Phe Ser Pro Ser Val Gln Cys Pro Asn Asp Gly Phe Gly Val  
115 120 125

Tyr Ser Asn Ser Tyr Gly Pro Glu Phe Ala His Cys Arg Glu Ile Gln  
130 135 140

Trp Asn Ser Leu Gly Asn Gly Leu Ala Tyr Glu Asp Phe Ser Phe Pro  
145 150 155 160

Ile Phe Leu Leu Glu Asp Glu Asn Glu Thr Lys Val Ile Lys Gln Cys  
165 170 175

Tyr Gln Asp His Asn Leu Ser Gln Asn Gly Ser Ala Pro Thr Phe Pro  
180 185 190

Leu Cys Ala Met Gln Leu Phe Ser His Met His Ala Val Ile Ser Thr  
195 200 205

Ala Thr Cys Met Arg Arg Ser Ser Ile Gln Ser Thr Phe Ser Ile Asn  
210 215 220

Pro Glu Ile Val Cys Asp Pro Leu Ser Asp Tyr Asn Val Trp Ser Met  
225 230 235 240

Leu Lys Pro Ile Asn Thr Thr Gly Thr Leu Lys Pro Asp Asp Arg Val  
245 250 255

Val Val Ala Ala Thr Arg Leu Asp Ser Arg Ser Phe Phe Trp Asn Val  
260 265 270

Ala Pro Gly Ala Glu Ser Ala Val Ala Ser Phe Val Thr Gln Leu Ala  
275 280 285

Ala Ala Glu Ala Leu Gln Lys Ala Pro Asp Val Thr Thr Leu Pro Arg  
290 295 300

Asn Val Met Phe Val Phe Phe Gln Gly Glu Thr Phe Asp Tyr Ile Gly  
305 310 315 320

Ser Ser Arg Met Val Tyr Asp Met Glu Lys Gly Lys Phe Pro Val Gln  
325 330 335

Leu Glu Asn Val Asp Ser Phe Val Glu Leu Gly Gln Val Ala Leu Arg  
340 345 350

Thr Ser Leu Glu Leu Trp Met His Thr Asp Pro Val Ser Gln Lys Asn  
355 360 365

Glu Ser Val Arg Asn Gln Val Glu Asp Leu Leu Ala Thr Leu Glu Lys  
370 375 380

Ser Gly Ala Gly Val Pro Ala Val Ile Leu Arg Arg Pro Asn Gln Ser  
385 390 395 400

Gln Pro Leu Pro Pro Ser Ser Leu Gln Arg Phe Leu Arg Ala Arg Asn  
                   405                        410                        415  
  
 Ile Ser Gly Val Val Leu Ala Asp His Ser Gly Ala Phe His Asn Lys  
                   420                        425                        430  
  
 Tyr Tyr Gln Ser Ile Tyr Asp Thr Ala Glu Asn Ile Asn Val Ser Tyr  
                   435                        440                        445  
  
 Pro Glu Trp Leu Ser Pro Glu Glu Asp Leu Asn Phe Val Thr Asp Thr  
                   450                        455                        460  
  
 Ala Lys Ala Leu Ala Asp Val Ala Thr Val Leu Gly Arg Ala Leu Tyr  
                   465                        470                        480  
  
 Glu Leu Ala Gly Gly Thr Asn Phe Ser Asp Thr Val Gln Ala Asp Pro  
                   485                        490                        495  
  
 Gln Thr Val Thr Arg Leu Leu Tyr Gly Phe Leu Ile Lys Ala Asn Asn  
                   500                        505                        510  
  
 Ser Trp Phe Gln Ser Ile Leu Arg Gln Asp Leu Arg Ser Tyr Leu Gly  
                   515                        520                        525  
  
 Asp Gly Pro Leu Gln His Tyr Ile Ala Val Ser Ser Pro Thr Asn Thr  
                   530                        535                        540  
  
 Thr Tyr Val Val Gln Tyr Ala Leu Ala Asn Leu Thr Gly Thr Val Val  
                   545                        550                        560  
  
 Asn Leu Thr Arg Glu Gln Cys Gln Asp Pro Ser Lys Val Pro Ser Glu  
                   565                        570                        575  
  
 Asn Lys Asp Leu Tyr Glu Tyr Ser Trp Val Gln Gly Pro Leu His Ser  
                   580                        585                        590  
  
 Asn Glu Thr Asp Arg Leu Pro Arg Cys Val Arg Ser Thr Ala Arg Leu  
                   595                        600                        605  
  
 Ala Arg Ala Leu Ser Pro Ala Phe Glu Leu Ser Gln Trp Ser Ser Thr  
                   610                        615                        620  
  
 Glu Tyr Ser Thr Trp Thr Glu Ser Arg Trp Lys Asp Ile Arg Ala Arg  
                   625                        630                        640  
  
 Ile Phe Leu Ile Ala Ser Lys Glu Leu Glu Leu Ile Thr Leu Thr Val  
                   645                        650                        655  
  
 Gly Phe Gly Ile Leu Ile Phe Ser Leu Ile Val Thr Tyr Cys Ile Asn  
                   660                        665                        670  
  
 Ala Lys Ala Asp Val Leu Phe Ile Ala Pro Arg Glu Pro Gly Ala Val  
                   675                        680                        685  
  
 Ser Tyr  
                   690

<211> 170  
<212> PRT  
<213> Homo sapiens

<400> 46  
Gln Val Pro Arg Ser Lys Ala Leu Glu Val Thr Lys Leu Ala Ile Glu  
1 5 10 15  
Ala Gly Phe Arg His Ile Asp Ser Ala His Leu Tyr Asn Asn Glu Glu  
20 25 30  
Gln Val Gly Leu Ala Ile Arg Ser Lys Ile Ala Asp Gly Ser Val Lys  
35 40 45  
Arg Glu Asp Ile Phe Tyr Thr Ser Lys Leu Trp Ser Thr Phe His Arg  
50 55 60  
Pro Glu Leu Val Arg Pro Ala Leu Glu Asn Ser Leu Lys Lys Ala Gln  
65 70 75 80  
Leu Asp Tyr Val Asp Leu Tyr Leu Ile His Ser Pro Met Ser Leu Lys  
85 90 95  
Pro Gly Glu Glu Leu Ser Pro Thr Asp Glu Gln Val Ala Lys Val Ile  
100 105 110  
Phe Asp Ile Val Asp Leu Cys Thr Thr Trp Glu Gly Met Glu Lys Cys  
115 120 125  
Lys Asp Gly Arg Asn Trp Gly Lys Ser Ile Gly Val Ser His Phe Asn  
130 135 140  
Pro Gln Ala Leu Gly Met Ser Leu Gln Lys Ala Gly Ile Gln Leu Lys  
145 150 155 160  
Arg Ser Ala Pro Val Glu Cys Pro Ile Tyr  
165 170

<210> 47  
<211> 1596  
<212> PRT  
<213> Homo sapiens

<400> 47  
Met Thr Thr Glu Thr Gly Pro Asp Ser Glu Val Lys Lys Ala Gln Glu  
1 5 10 15  
Glu Ala Pro Gln Gln Pro Glu Ala Ala Ala Val Thr Thr Pro Val  
20 25 30  
Thr Pro Ala Gly His Gly His Pro Glu Ala Asn Ser Asn Glu Lys His  
35 40 45  
Pro Ser Gln Gln Asp Thr Arg Pro Ala Glu Gln Ser Leu Asp Met Glu  
50 55 60  
Glu Lys Asp Tyr Ser Glu Ala Asp Gly Leu Ser Glu Arg Thr Thr Pro  
65 70 75 80



385

390

395

400

Ser Lys Phe Arg Tyr Ser Gly Arg Thr Gln Ala Gln Thr Arg Gln Ala  
405 410 415

Ser Ala Leu Ile Asp Arg Pro Ala Pro Phe Phe Glu Arg Ser Ser Ser  
420 425 430

Lys Arg Tyr Thr Met Ser Arg Ser Leu Asp Gly Ala Glu Phe Ser Arg  
435 440 445

Pro Ala Ser Val Ser Glu Asn His Asp Ala Gly Pro Asp Gly Asp Lys  
450 455 460

Arg Asp Glu Asp Gly Glu Ser Gly Gly Gln Arg Ser Glu Ala Glu Glu  
465 470 475 480

Gly Glu Val Arg Thr Pro Thr Lys Ile Lys Glu Leu Lys Phe Leu Asp  
485 490 495

Lys Pro Glu Asp Val Leu Leu Lys His Gln Ala Ser Ile Asn Glu Leu  
500 505 510

Lys Arg Thr Leu Lys Glu Pro Asn Ser Lys Leu Ile His Arg Asp Arg  
515 520 525

Asp Trp Glu Arg Glu Arg Arg Leu Pro Ser Ser Pro Ala Ser Pro Ser  
530 535 540

Pro Lys Gly Thr Pro Glu Lys Ala Asn Glu Ser Gln Arg Thr Gln Asp  
545 550 555 560

Ile Ser Gln Arg Asp Leu Val Pro Glu Pro Gly Ala Ala Ala Gly Leu  
565 570 575

Glu Val Phe Thr Gln Lys Ser Leu Ala Ala Ser Pro Glu Gly Ser Glu  
580 585 590

His Trp Val Phe Ile Glu Arg Glu Tyr Thr Arg Pro Glu Glu Leu Gly  
595 600 605

Leu Leu Lys Val Thr Thr Met Gln Gln Glu Glu Arg Gln Ala Gly Leu  
610 615 620

Ala Gly Ile Leu Ala Asn Gly Arg Leu Ser Lys Val Asp Val Leu Val  
625 630 635 640

Asp Lys Phe Lys Val Glu Val Ala Thr Glu Glu Met Val Gly Asn Arg  
645 650 655

Arg Ala Asn Thr Gln Gln Gly Lys Met Ile Ala Ser Pro Glu Asp  
660 665 670

Phe Glu Ser Val Gly Glu Glu Gly Pro Trp Ile Arg Glu Ser Pro Gly  
675 680 685

Gly Ala Ala Leu Ala Ser Gly Arg Thr Leu Ala Glu Lys Leu Leu Glu  
690 695 700

Gly Ser Glu Leu Arg Ala Asp Thr Arg Glu Ala Thr Ile Arg Asn Arg  
 705 710 715 720

Cys Met Ser Asp Gly Gln Pro Glu Gly Gln Thr Glu Leu Arg Lys Gly  
 725 730 735

Leu Glu Glu Pro His Thr Cys Gly Arg Pro Thr Ala Pro Gly Thr Arg  
 740 745 750

Pro Ala Glu Val Asp Val Leu Ser Pro Ala Ser Asp Lys Gly Gly Leu  
 755 760 765

Gln Ser Phe Leu Leu Asp Pro Ala His Ala Glu Ala Arg Ala Glu Leu  
 770 775 780

Ser Asn Glu Thr Asp Thr Ser Phe Ala Glu Arg Ser Phe Tyr Leu Asn  
 785 790 795 800

Tyr Glu Glu Lys Asp Ser Glu Asp Gln Val Leu Pro Pro Pro Leu Glu  
 805 810 815

Glu Arg Lys Gly Arg Leu Asp Ala Pro Pro Gly Gly Glu Pro Arg Pro  
 820 825 830

Thr Leu Asn Ser Leu Asp Leu Arg Val Ser Ala Ala Ser Ser Arg  
 835 840 845

Ser Lys Asp Glu Ala His Met Thr Ser Pro Lys Glu Gly Ala Gly Thr  
 850 855 860

Pro Lys Asn His Gly Gly Pro Gly Asp Leu Lys Gly Ser Pro Ala Gly  
 865 870 875 880

Gln Thr Phe Ala Glu Gly Trp Glu Asp Ala Gln Trp Gly Val Glu Gly  
 885 890 895

Glu Phe Pro His Leu Thr Ala Ser Ala Ala Arg Glu Glu Gly Thr Pro  
 900 905 910

Val Ser Gly Asp Leu Leu Gly Lys Ala Glu Glu Ser Pro Thr Glu Glu  
 915 920 925

Leu Lys Lys His Pro Pro His Arg Gly Gln Gly Val His Pro Asp Pro  
 930 935 940

Gln Ala Cys Ala Leu Pro Arg Ala Ile Pro Leu Asn Val Arg Lys Pro  
 945 950 955 960

Val Lys Pro Asp Arg Gly Asn Phe Pro Pro Lys Glu Arg Gly Val Val  
 965 970 975

Pro Thr Gln Lys Gly Gly Ala Glu Leu Lys Asp Arg Glu Ala Ser Ala  
 980 985 990

Phe Leu His Met Glu Val Ile Ile Pro Leu Pro Ala Ser Pro Gly His  
 995 1000 1005

Ser Glu Asp Leu Ala Ala Leu Glu Glu Ala Ser Pro Ser Pro Thr Ser  
 1010 1015 1020

His Gly Ser Gly Glu Pro Ser Glu Leu Arg Glu Pro Phe Leu Arg His  
 1025 1030 1035 1040  
 Val His Leu Ser Lys Ala Ser Pro Glu Pro Lys Asp Gln Val Gly Phe  
 1045 1050 1055  
 Val Val Ser Pro Ala Thr Gly Gly Glu Arg Arg Pro Pro Pro Ile Thr  
 1060 1065 1070  
 Ser Arg Lys Pro Arg Val Val Pro Glu Glu Ala Glu Gly Arg Ile Pro  
 1075 1080 1085  
 Leu Gly Phe Gly Phe Pro Ser Gly Lys Arg Arg Glu Met Thr Ser Phe  
 1090 1095 1100  
 Gln Ala Gly Asp Gln Glu Gly Ser Leu Glu Asp Ile Ser Lys Thr Ser  
 1105 1110 1115 1120  
 Val Ala Asn Lys Ile Arg Ile Phe Glu Thr His Gly Ala Glu Thr Arg  
 1125 1130 1135  
 Arg Met Ser Glu Gly Glu Ala Arg Ser Leu Pro Asn Asp Val Ser Ser  
 1140 1145 1150  
 Glu Ala Pro Val Gly Gln Ala Glu Gln Gln Arg Ser Thr Leu Ser Asp  
 1155 1160 1165  
 Leu Gly Phe Ala Gln Leu Gln Pro Pro Gly Asp Phe Ala Ser Pro Lys  
 1170 1175 1180  
 Ala Thr His Ser Thr Val Ile Pro Leu Ala Thr Arg His Phe Arg Glu  
 1185 1190 1195 1200  
 Asp Thr Ser Ala Ser Tyr Gln Glu Ala His Thr Glu Leu Glu Pro Val  
 1205 1210 1215  
 Ser Pro Asn Ser Gly Cys Glu Thr Thr Leu Ala Glu Ala Thr Gly Thr  
 1220 1225 1230  
 Gly Val Thr Gly Arg Asn Lys Ser Gly Asp Ala Val Arg Glu Glu Lys  
 1235 1240 1245  
 Arg Ser Thr Asn Leu Ala Ala Asn Thr Pro Gly Lys Gly Gly Arg Leu  
 1250 1255 1260  
 Arg Phe Ala Ser Pro Ser Gly Pro Gln Arg Ala Gly Leu Arg Glu Gly  
 1265 1270 1275 1280  
 Ser Glu Glu Lys Val Lys Pro Pro Arg Pro Arg Ala Pro Glu Ser Asp  
 1285 1290 1295  
 Thr Gly Asp Glu Asp Gln Asp Gln Glu Arg Asp Thr Val Phe Leu Lys  
 1300 1305 1310  
 Asp Asn His Leu Ala Ile Glu Arg Lys Cys Ser Ser Ile Thr Val Ser  
 1315 1320 1325  
 Ser Thr Ser Ser Leu Glu Ala Glu Val Asp Phe Thr Val Ile Gly Asp

1330	1335	1340
Tyr His Gly Ser Ala Phe Glu Asp Phe Ser Arg Ser Leu Pro Glu Leu		
1345	1350	1355
Asp Arg Asp Lys Ser Asp Ser Asp Thr Glu Gly Leu Leu Phe Ser Arg		
	1365	1370
Asp Leu Asn Lys Gly Ala Pro Ser Gln Asp Asp Glu Ser Gly Gly Ile		
1380	1385	1390
Glu Asp Ser Pro Asp Arg Gly Ala Cys Ser Thr Pro Asp Met Pro Gln		
1395	1400	1405
Phe Glu Pro Val Lys Thr Glu Thr Met Thr Val Ser Ser Leu Ala Ile		
1410	1415	1420
Arg Lys Lys Ile Glu Pro Glu Ala Val Leu Gln Thr Arg Val Ser Ala		
1425	1430	1435
Met Asp Asn Thr Gln Val Asp Gly Ser Ala Ser Val Gly Arg Glu Phe		
1445	1450	1455
Ile Ala Thr Thr Pro Ser Ile Thr Thr Glu Thr Ile Ser Thr Thr Met		
1460	1465	1470
Glu Asn Ser Leu Lys Ser Gly Lys Gly Ala Ala Ala Met Ile Pro Gly		
1475	1480	1485
Pro Gln Thr Val Ala Thr Glu Ile Arg Ser Leu Ser Pro Ile Ile Gly		
1490	1495	1500
Lys Asp Val Leu Thr Ser Thr Tyr Gly Ala Thr Ala Glu Thr Leu Ser		
1505	1510	1515
Thr Ser Thr Thr His Val Thr Lys Thr Val Lys Gly Gly Phe Ser		
1525	1530	1535
Glu Thr Arg Ile Glu Lys Arg Ile Ile Ile Thr Gly Asp Glu Asp Val		
1540	1545	1550
Asp Gln Asp Gln Ala Leu Ala Ile Lys Glu Ala Lys Leu Gln		
1555	1560	1565
His Pro Asp Met Leu Val Thr Lys Ala Val Val Tyr Arg Glu Thr Asp		
1570	1575	1580
Pro Ser Pro Glu Glu Arg Asp Lys Lys Pro Gln Lys		
1585	1590	1595

<210> 48  
 <211> 455  
 <212> PRT  
 <213> Homo sapiens

<400> 48  
 Met Ala Ala Pro Glu Glu His Asp Ser Pro Thr Glu Ala Ser Gln Pro  
 1 5 10 15

Ile Val Glu Glu Glu Glu Thr Lys Thr Phe Lys Asp Leu Gly Val Thr  
 20 25 30  
 Asp Val Leu Cys Glu Ala Cys Asp Gln Leu Gly Trp Thr Lys Pro Thr  
 35 40 45  
 Lys Ile Gln Ile Glu Ala Ile Pro Leu Ala Leu Gln Gly Arg Asp Ile  
 50 55 60  
 Ile Gly Leu Ala Glu Thr Gly Ser Gly Lys Thr Gly Ala Phe Ala Leu  
 65 70 75 80  
 Pro Ile Leu Asn Ala Leu Leu Glu Thr Pro Gln Arg Leu Phe Ala Leu  
 85 90 95  
 Val Leu Thr Pro Thr Arg Glu Leu Ala Phe Gln Ile Ser Glu Gln Phe  
 100 105 110  
 Glu Ala Leu Gly Ser Ser Ile Gly Val Gln Ser Ala Val Ile Val Gly  
 115 120 125  
 Gly Ile Asp Ser Met Ser Gln Ser Leu Ala Leu Ala Lys Lys Pro His  
 130 135 140  
 Ile Ile Ile Ala Thr Pro Gly Arg Leu Ile Asp His Leu Glu Asn Thr  
 145 150 155 160  
 Lys Gly Phe Asn Leu Arg Ala Leu Lys Tyr Leu Val Met Asp Glu Ala  
 165 170 175  
 Asp Arg Ile Leu Asn Met Asp Phe Glu Thr Glu Val Asp Lys Ile Leu  
 180 185 190  
 Lys Val Ile Pro Arg Asp Arg Lys Thr Phe Leu Phe Ser Ala Thr Met  
 195 200 205  
 Thr Lys Lys Val Gln Lys Leu Gln Arg Ala Ala Leu Lys Asn Pro Val  
 210 215 220  
 Lys Cys Ala Val Ser Ser Lys Tyr Gln Thr Val Glu Lys Leu Gln Gln  
 225 230 235 240  
 Tyr Tyr Ile Phe Ile Pro Ser Lys Phe Lys Asp Thr Tyr Leu Val Tyr  
 245 250 255  
 Ile Leu Asn Glu Leu Ala Gly Asn Ser Phe Met Ile Phe Cys Ser Thr  
 260 265 270  
 Cys Asn Asn Thr Gln Arg Thr Ala Leu Leu Leu Arg Asn Leu Gly Phe  
 275 280 285  
 Thr Ala Ile Pro Leu His Gly Gln Met Ser Gln Ser Lys Arg Leu Gly  
 290 295 300  
 Ser Leu Asn Lys Phe Lys Ala Lys Ala Arg Ser Ile Leu Leu Ala Thr  
 305 310 315 320  
 Asp Val Ala Ser Arg Gly Leu Asp Ile Pro His Val Asp Val Val Val

50  
325                    330                    335

Asn Phe Asp Ile Pro Thr His Ser Lys Asp Tyr Ile His Arg Val Gly  
340                    345                    350

Arg Thr Ala Arg Ala Gly Arg Ser Gly Lys Ala Ile Thr Phe Val Thr  
355                    360                    365

Gln Tyr Asp Val Glu Leu Phe Gln Arg Ile Glu His Leu Ile Gly Lys  
370                    375                    380

Lys Leu Pro Gly Phe Pro Thr Gln Asp Asp Glu Val Met Met Leu Thr  
385                    390                    395                    400

Glu Arg Val Ala Glu Ala Gln Arg Phe Ala Arg Met Glu Leu Arg Glu  
405                    410                    415

His Gly Glu Lys Lys Arg Ser Arg Glu Asp Ala Gly Asp Asn Asp  
420                    425                    430

Asp Thr Glu Gly Ala Ile Gly Val Arg Asn Lys Val Ala Gly Gly Lys  
435                    440                    445

Met Lys Lys Arg Lys Gly Arg  
450                    455

<210> 49  
<211> 246  
<212> PRT  
<213> Homo sapiens

<400> 49  
Met Ala Trp Ala Pro Leu Leu Leu Thr Leu Leu Ser Leu Leu Thr Gly  
1                    5                            10                    15

Ser Leu Ser Gln Pro Ile Leu Thr Gln Pro Pro Ser Ala Ser Ala Ser  
20                    25                            30

Leu Gly Ala Ser Val Thr Leu Thr Cys Ser Val Ser Ser Asp Tyr Lys  
35                    40                            45

Asn Leu Glu Val Asp Trp Phe Gln Gln Arg Pro Gly Lys Gly Pro Arg  
50                    55                            60

Phe Val Met Arg Val Gly Thr Gly Val Val Gly Phe Arg Gly Ala  
65                    70                            75                    80

Asp Ile Pro Asp Arg Phe Ser Val Ser Gly Ser Gly Leu Asn Arg Phe  
85                    90                            95

Leu Thr Ile Arg Asn Ile Glu Glu Asp Glu Ser Asp Tyr His Cys  
100                    105                            110

Gly Thr Asp Leu Gly Ser Gly Thr Ser Phe Val Ser Trp Val Phe Gly  
115                    120                            125

Gly Gly Thr Lys Leu Thr Val Leu Ser Gln Pro Lys Ala Ala Pro Ser  
130                    135                            140

Val Thr Leu Phe Pro Pro Ser Ser Glu Glu Leu Gln Ala Asn Lys Ala  
 145 150 155 160  
 Thr Leu Val Cys Leu Ile Ser Asp Phe Tyr Pro Gly Ala Val Thr Val  
 165 170 175  
 Ala Trp Lys Ala Asp Ser Ser Pro Val Lys Ala Gly Val Glu Thr Thr  
 180 185 190  
 Thr Pro Ser Lys Gln Ser Asn Asn Lys Tyr Ala Ala Ser Ser Tyr Leu  
 195 200 205  
 Ser Leu Thr Pro Glu Gln Trp Lys Ser Asn Arg Ser Tyr Ser Cys Gln  
 210 215 220  
 Val Thr His Glu Gly Ser Thr Val Glu Lys Thr Val Ala Pro Thr Glu  
 225 230 235 240  
 Cys Ser Thr Glu Cys Ser  
 245

<210> 50  
 <211> 228  
 <212> PRT  
 <213> Homo sapiens

<400> 50  
 Ala Asn Ala Leu Gly Pro Cys Ala Glu Ile Val Met Thr Gln Thr Pro  
 1 5 10 15  
 Leu Ser Leu Ser Ile Thr Pro Gly Glu Gln Ala Ser Met Ser Cys Arg  
 20 25 30  
 Ser Ser Gln Ser Leu Leu His Ser Asp Gly Tyr Thr Tyr Leu Tyr Trp  
 35 40 45  
 Phe Leu Gln Lys Pro Gly Gln Ser Pro Gln Leu Leu Ile Tyr Glu Val  
 50 55 60  
 Ser Asn Arg Phe Ser Gly Val Ser Pro Ile Arg Phe Ser Gly Ser Gly  
 65 70 75 80  
 Ser Gly Arg Glu Phe Thr Leu Arg Ile Ser Arg Val Glu Ala Asp Asp  
 85 90 95  
 Ala Gly Val Tyr Tyr Cys Met Gln Thr Thr Gln Thr Pro Asn Thr Phe  
 100 105 110  
 Gly Gln Gly Thr Arg Leu Glu Ile Lys Arg Thr Val Ala Ala Pro Ser  
 115 120 125  
 Val Phe Ile Phe Pro Pro Ser Asp Glu Gln Leu Lys Ser Gly Thr Ala  
 130 135 140  
 Ser Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val  
 145 150 155 160

Gln Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser  
 165 170 175

Val Thr Glu Gln Asp Ser Lys Asp Ser Thr Tyr Ser Leu Ser Ser Thr  
 180 185 190

Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys His Lys Leu Tyr Ala Cys  
 195 200 205

Glu Val Thr His Gln Gly Leu Ser Ser Pro Val Thr Lys Ser Phe Asn  
 210 215 220

Arg Gly Glu Cys  
 225

<210> 51

<211> 106

<212> PRT

<213> Homo sapiens

<400> 51

Gly Gln Pro Lys Ala Asn Pro Thr Val Thr Leu Phe Pro Pro Ser Ser  
 1 5 10 15

Glu Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser Asp  
 20 25 30

Phe Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Gly Ser Pro  
 35 40 45

Val Lys Ala Gly Val Glu Thr Thr Lys Pro Ser Lys Gln Ser Asn Asn  
 50 55 60

Lys Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp Lys  
 65 70 75 80

Ser His Arg Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr Val  
 85 90 95

Glu Lys Thr Val Ala Pro Thr Glu Cys Ser  
 100 105

<210> 52

<211> 56

<212> PRT

<213> Homo sapiens

<400> 52

Arg Thr Gly Tyr Glu Glu Glu Thr Trp Asn Leu Lys Glu Cys Val Gly  
 1 5 10 15

Arg Cys Ala Asn Pro Asn Val Asn Phe Leu Thr Lys Val Glu Ser Pro  
 20 25 30

Gly Met Val Gln Arg Trp Gly Leu Leu Leu Cys Arg Arg Asp Ser Arg  
 35 40 45

Phe Thr Pro Trp Gln Lys Ile Tyr  
50 55

<210> 53  
<211> 824  
<212> PRT  
<213> Homo sapiens

<400> 53  
Met Ala Phe Ala Ser Phe Arg Arg Ile Leu Ala Leu Ser Thr Phe Glu  
1 5 10 15  
Lys Arg Lys Ser Arg Glu Tyr Glu His Val Arg Arg Asp Leu Asp Pro  
20 25 30  
Asn Glu Val Trp Glu Ile Val Gly Glu Leu Gly Asp Gly Ser Phe Gly  
35 40 45  
Met Val Tyr Lys Ala Lys Asn Lys Glu Thr Gly Ala Leu Ala Ala Ala  
50 55 60  
Ile Val Ile Glu Thr Lys Ser Glu Glu Leu Glu Asp Tyr Ile Val  
65 70 75 80  
Glu Ile Glu Ile Leu Ala Thr Cys Asp His Pro Tyr Ile Val Lys Leu  
85 90 95  
Leu Gly Ala Tyr Tyr His Asp Gly Lys Leu Trp Ile Met Ile Glu Phe  
100 105 110  
Cys Pro Gly Gly Ala Val Asp Ala Ile Met Leu Glu Leu Asp Arg Gly  
115 120 125  
Leu Thr Glu Pro Gln Ile Gln Val Val Cys Arg Gln Met Leu Glu Ala  
130 135 140  
Leu Asn Phe Leu His Ser Lys Arg Ile Ile His Arg Asp Leu Lys Ala  
145 150 155 160  
Gly Asn Val Leu Met Thr Leu Glu Gly Asp Ile Arg Leu Ala Asp Phe  
165 170 175  
Gly Val Ser Ala Lys Asn Leu Lys Thr Leu Gln Lys Arg Asp Ser Phe  
180 185 190  
Ile Gly Thr Pro Tyr Trp Met Ala Pro Glu Val Val Met Cys Glu Thr  
195 200 205  
Met Lys Asp Thr Pro Tyr Asp Tyr Lys Ala Asp Ile Trp Ser Leu Gly  
210 215 220  
Ile Thr Leu Ile Glu Met Ala Gln Ile Glu Pro Pro His His Glu Leu  
225 230 235 240  
Asn Pro Met Arg Val Leu Leu Lys Ile Ala Lys Ser Asp Pro Pro Thr  
245 250 255  
Leu Leu Thr Pro Ser Lys Trp Ser Val Glu Phe Arg Asp Phe Leu Lys

260

265

270

Ile Ala Leu Asp Lys Asn Pro Glu Thr Arg Pro Ser Ala Ala Ala Ala  
275 280 285

Leu Glu His Pro Phe Val Ser Ser Ile Thr Ser Asn Lys Ala Leu Arg  
290 295 300

Glu Leu Val Ala Glu Ala Lys Ala Glu Val Met Glu Glu Ile Glu Asp  
305 310 315 320

Gly Arg Asp Glu Gly Glu Glu Asp Ala Val Asp Ala Ala Ser Thr  
325 330 335

Leu Glu Asn His Thr Gln Asn Ser Ser Glu Val Ser Pro Pro Ser Leu  
340 345 350

Asn Ala Asp Lys Pro Leu Glu Glu Ser Pro Ser Thr Pro Leu Ala Pro  
355 360 365

Ser Gln Ser Gln Asp Ser Val Asn Glu Pro Cys Ser Gln Pro Ser Gly  
370 375 380

Asp Arg Ser Leu Gln Thr Thr Ser Pro Pro Val Val Ala Pro Gly Asn  
385 390 395 400

Glu Asn Gly Leu Ala Val Pro Val Pro Leu Arg Lys Ser Arg Pro Val  
405 410 415

Ser Met Asp Ala Arg Ile Gln Val Ala Gln Glu Lys Gln Val Ala Glu  
420 425 430

Gln Gly Gly Asp Leu Ser Pro Ala Ala Asn Arg Ser Gln Lys Ala Ser  
435 440 445

Gln Ser Arg Pro Asn Ser Ser Ala Leu Glu Thr Leu Gly Gly Glu Lys  
450 455 460

Leu Ala Asn Gly Ser Leu Glu Pro Pro Ala Gln Ala Ala Pro Gly Pro  
465 470 475 480

Ser Lys Arg Asp Ser Asp Cys Ser Ser Leu Cys Thr Ser Glu Ser Met  
485 490 495

Asp Tyr Gly Thr Asn Leu Ser Thr Asp Leu Ser Leu Asn Lys Glu Met  
500 505 510

Gly Ser Leu Ser Ile Lys Asp Pro Lys Leu Tyr Lys Lys Thr Leu Lys  
515 520 525

Arg Thr Arg Lys Phe Val Val Asp Gly Val Glu Val Ser Ile Thr Thr  
530 535 540

Ser Lys Ile Ile Ser Glu Asp Glu Lys Lys Asp Glu Glu Met Arg Phe  
545 550 555 560

Leu Arg Arg Gln Glu Leu Arg Glu Leu Arg Leu Leu Gln Lys Glu Glu  
565 570 575

His Arg Asn Gln Thr Gln Leu Ser Asn Lys His Glu Leu Gln Leu Glu  
               580                         585                         590  
  
 Gln Met His Lys Arg Phe Glu Gln Glu Ile Asn Ala Lys Lys Lys Phe  
               595                         600                         605  
  
 Phe Asp Thr Glu Leu Glu Asn Leu Glu Arg Gln Gln Lys Gln Gln Val  
               610                         615                         620  
  
 Glu Lys Met Glu Gln Asp His Ala Val Arg Arg Glu Glu Ala Arg  
               625                         630                         640  
  
 Arg Ile Arg Leu Glu Gln Asp Arg Asp Tyr Thr Arg Phe Gln Glu Gln  
               645                         650                         655  
  
 Leu Lys Leu Met Lys Lys Glu Val Lys Asn Glu Val Glu Lys Leu Pro  
               660                         665                         670  
  
 Arg Gln Gln Arg Lys Glu Ser Met Lys Gln Lys Met Glu Glu His Thr  
               675                         680                         685  
  
 Gln Lys Lys Gln Leu Leu Asp Arg Asp Phe Val Ala Lys Gln Lys Glu  
               690                         695                         700  
  
 Asp Leu Glu Leu Ala Met Lys Arg Leu Thr Thr Asp Asn Arg Arg Glu  
               705                         710                         720  
  
 Ile Cys Asp Lys Glu Arg Glu Cys Leu Met Lys Lys Gln Glu Leu Leu  
               725                         730                         735  
  
 Arg Asp Arg Glu Ala Ala Leu Trp Glu Met Glu Glu His Gln Leu Gln  
               740                         745                         750  
  
 Glu Arg His Gln Leu Val Lys Gln Gln Leu Lys Asp Gln Tyr Phe Leu  
               755                         760                         765  
  
 Gln Arg His Glu Leu Leu Arg Lys His Glu Lys Glu Arg Glu Gln Met  
               770                         775                         780  
  
 Gln Arg Tyr Asn Gln Arg Met Ile Glu Gln Leu Lys Val Arg Gln Gln  
               785                         790                         800  
  
 Gln Glu Lys Ala Arg Leu Pro Lys Ile Gln Arg Ser Glu Gly Lys Thr  
               805                         810                         815  
  
 Arg Met Ala Met Tyr Lys Lys Ser  
               820

<210> 54  
 <211> 1997  
 <212> PRT  
 <213> Homo sapiens

<400> 54  
 Met Leu Ser His Gly Ala Gly Leu Ala Leu Trp Ile Thr Leu Ser Leu  
               1                         5                         10                         15  
  
 Leu Gln Thr Gly Leu Ala Glu Pro Glu Arg Cys Asn Phe Thr Leu Ala

20

25

30

Glu Ser Lys Ala Ser Ser His Ser Val Ser Ile Gln Trp Arg Ile Leu  
35 40 45

Gly Ser Pro Cys Asn Phe Ser Leu Ile Tyr Ser Ser Asp Thr Leu Gly  
50 55 60

Ala Ala Leu Cys Pro Thr Phe Arg Ile Asp Asn Thr Thr Tyr Gly Cys  
65 70 75 80

Asn Leu Gln Asp Leu Gln Ala Gly Thr Ile Tyr Asn Phe Arg Ile Ile  
85 90 95

Ser Leu Asp Glu Glu Arg Thr Val Val Leu Gln Thr Asp Pro Leu Pro  
100 105 110

Pro Ala Arg Phe Gly Val Ser Lys Glu Lys Thr Thr Ser Thr Ser Leu  
115 120 125

His Val Trp Trp Thr Pro Ser Ser Gly Lys Val Thr Ser Tyr Glu Val  
130 135 140

Gln Leu Phe Asp Glu Asn Asn Gln Lys Ile Gln Gly Val Gln Ile Gln  
145 150 155 160

Glu Ser Thr Ser Trp Asn Glu Tyr Thr Phe Phe Asn Leu Thr Ala Gly  
165 170 175

Ser Lys Tyr Asn Ile Ala Ile Thr Ala Val Ser Gly Gly Lys Arg Ser  
180 185 190

Phe Ser Val Tyr Thr Asn Gly Ser Thr Val Pro Ser Pro Val Lys Asp  
195 200 205

Ile Gly Ile Ser Thr Lys Ala Asn Ser Leu Leu Ile Ser Trp Ser His  
210 215 220

Gly Ser Gly Asn Val Glu Arg Tyr Arg Leu Met Leu Met Asp Lys Gly  
225 230 235 240

Ile Leu Val His Gly Val Val Asp Lys His Ala Thr Ser Tyr Ala  
245 250 255

Phe His Gly Leu Ser Pro Gly Tyr Leu Tyr Asn Leu Thr Val Met Thr  
260 265 270

Glu Ala Ala Gly Leu Gln Asn Tyr Arg Trp Lys Leu Val Arg Thr Ala  
275 280 285

Pro Met Glu Val Ser Asn Leu Lys Val Thr Asn Asp Gly Ser Leu Thr  
290 295 300

Ser Leu Lys Val Lys Trp Gln Arg Pro Pro Gly Asn Val Asp Ser Tyr  
305 310 315 320

Asn Ile Thr Leu Ser His Lys Gly Thr Ile Lys Glu Ser Arg Val Leu  
325 330 335

Ala Pro Trp Ile Thr Glu Thr His Phe Lys Glu Leu Val Pro Gly Arg  
 340 345 350

Leu Tyr Gln Val Thr Val Ser Cys Val Ser Gly Glu Leu Ser Ala Gln  
 355 360 365

Lys Met Ala Val Gly Arg Thr Phe Pro Asp Lys Val Ala Asn Leu Glu  
 370 375 380

Ala Asn Asn Asn Gly Arg Met Arg Ser Leu Val Val Ser Trp Ser Pro  
 385 390 395 400

Pro Ala Gly Asp Trp Glu Gln Tyr Arg Ile Leu Leu Phe Asn Asp Ser  
 405 410 415

Val Val Leu Leu Asn Ile Thr Val Gly Lys Glu Glu Thr Gln Tyr Val  
 420 425 430

Met Asp Asp Thr Gly Leu Val Pro Gly Arg Gln Tyr Glu Val Glu Val  
 435 440 445

Ile Val Glu Ser Gly Asn Leu Lys Asn Ser Glu Arg Cys Gln Gly Arg  
 450 455 460

Thr Val Pro Leu Ala Val Leu Gln Leu Arg Val Lys His Ala Asn Glu  
 465 470 475 480

Thr Ser Leu Ser Ile Met Trp Gln Thr Pro Val Ala Glu Trp Glu Lys  
 485 490 495

Tyr Ile Ile Ser Leu Ala Asp Arg Asp Leu Leu Leu Ile His Lys Ser  
 500 505 510

Leu Ser Lys Asp Ala Lys Glu Phe Thr Phe Thr Asp Leu Val Pro Gly  
 515 520 525

Arg Lys Tyr Met Ala Thr Val Thr Ser Ile Ser Gly Asp Leu Lys Asn  
 530 535 540

Ser Ser Ser Val Lys Gly Arg Thr Val Pro Ala Gln Val Thr Asp Leu  
 545 550 555 560

His Val Ala Asn Gln Gly Met Thr Ser Ser Leu Phe Thr Asn Trp Thr  
 565 570 575

Gln Ala Gln Gly Asp Val Glu Phe Tyr Gln Val Leu Leu Ile His Glu  
 580 585 590

Asn Val Val Ile Lys Asn Glu Ser Ile Ser Ser Glu Thr Ser Arg Tyr  
 595 600 605

Ser Phe His Ser Leu Lys Ser Gly Ser Leu Tyr Ser Val Val Val Thr  
 610 615 620

Thr Val Ser Gly Gly Ile Ser Ser Arg Gln Val Val Val Glu Gly Arg  
 625 630 635 640

Thr Val Pro Ser Ser Val Ser Gly Val Thr Val Asn Asn Ser Gly Arg  
 645 650 655

Asn Asp Tyr Leu Ser Val Ser Trp Leu Val Ala Pro Gly Asp Val Asp  
 660 665 670  
 Asn Tyr Glu Val Thr Leu Ser His Asp Gly Lys Val Val Gln Ser Leu  
 675 680 685  
 Val Ile Ala Lys Ser Val Arg Glu Cys Ser Phe Ser Ser Leu Thr Pro  
 690 695 700  
 Gly Arg Leu Tyr Thr Val Thr Ile Thr Arg Ser Gly Lys Tyr Glu  
 705 710 715 720  
 Asn His Ser Phe Ser Gln Glu Arg Thr Val Pro Asp Lys Val Gln Gly  
 725 730 735  
 Val Ser Val Ser Asn Ser Ala Arg Ser Asp Tyr Leu Arg Val Ser Trp  
 740 745 750  
 Val Tyr Ala Thr Gly Asp Phe Asp His Tyr Glu Val Thr Ile Lys Asn  
 755 760 765  
 Lys Asn Asn Phe Ile Gln Thr Lys Ser Ile Pro Lys Ser Glu Asn Glu  
 770 775 780  
 Cys Val Phe Val Gln Leu Val Pro Gly Arg Leu Tyr Ser Val Thr Val  
 785 790 795 800  
 Thr Thr Lys Ser Gly Gln Tyr Glu Ala Asn Glu Gln Gly Asn Gly Arg  
 805 810 815  
 Thr Ile Pro Glu Pro Val Lys Asp Leu Thr Leu Arg Asn Arg Ser Thr  
 820 825 830  
 Glu Asp Leu His Val Thr Trp Ser Gly Ala Asn Gly Asp Val Asp Gln  
 835 840 845  
 Tyr Glu Ile Gln Leu Leu Phe Asn Asp Met Lys Val Phe Pro Pro Phe  
 850 855 860  
 His Leu Val Asn Thr Ala Thr Glu Tyr Arg Phe Thr Ser Leu Thr Pro  
 865 870 875 880  
 Gly Arg Gln Tyr Lys Ile Leu Val Leu Thr Ile Ser Gly Asp Val Gln  
 885 890 895  
 Gln Ser Ala Phe Ile Glu Gly Phe Thr Val Pro Ser Ala Val Lys Asn  
 900 905 910  
 Ile His Ile Ser Pro Asn Gly Ala Thr Asp Ser Leu Thr Val Asn Trp  
 915 920 925  
 Thr Pro Gly Gly Asp Val Asp Ser Tyr Thr Val Ser Ala Phe Arg  
 930 935 940  
 His Ser Gln Lys Val Asp Ser Gln Thr Ile Pro Lys His Val Phe Glu  
 945 950 955 960  
 His Thr Phe His Arg Leu Glu Ala Gly Glu Gln Tyr Gln Ile Met Ile

965

970

975

Ala Ser Val Ser Gly Ser Leu Lys Asn Gln Ile Asn Val Val Gly Arg  
980 985 990

Thr Val Pro Ala Ser Val Gln Gly Val Ile Ala Asp Asn Ala Tyr Ser  
995 1000 1005

Ser Tyr Ser Leu Ile Val Ser Trp Gln Lys Ala Ala Gly Val Ala Glu  
1010 1015 1020

Arg Tyr Asp Ile Leu Leu Thr Glu Asn Gly Ile Leu Leu Arg Asn  
1025 1030 1035 1040

Thr Ser Glu Pro Ala Thr Thr Lys Gln His Lys Phe Glu Asp Leu Thr  
1045 1050 1055

Pro Gly Lys Lys Tyr Lys Ile Gln Ile Leu Thr Val Ser Gly Gly Leu  
1060 1065 1070

Phe Ser Lys Glu Ala Gln Thr Glu Gly Arg Thr Val Pro Ala Ala Val  
1075 1080 1085

Thr Asp Leu Arg Ile Thr Glu Asn Ser Thr Arg His Leu Ser Phe Arg  
1090 1095 1100

Trp Thr Ala Ser Glu Gly Glu Leu Ser Trp Tyr Asn Ile Phe Leu Tyr  
1105 1110 1115 1120

Asn Pro Asp Gly Asn Leu Gln Glu Arg Ala Gln Val Asp Pro Leu Val  
1125 1130 1135

Gln Ser Phe Ser Phe Gln Asn Leu Leu Gln Gly Arg Met Tyr Lys Met  
1140 1145 1150

Val Ile Val Thr His Ser Gly Glu Leu Ser Asn Glu Ser Phe Ile Phe  
1155 1160 1165

Gly Arg Thr Val Pro Ala Ser Val Ser His Leu Arg Gly Ser Asn Arg  
1170 1175 1180

Asn Thr Thr Asp Ser Leu Trp Phe Asn Trp Ser Pro Ala Ser Gly Asp  
1185 1190 1195 1200

Phe Asp Phe Tyr Glu Leu Ile Leu Tyr Asn Pro Asn Gly Thr Lys Lys  
1205 1210 1215

Glu Asn Trp Lys Asp Lys Asp Leu Thr Glu Trp Arg Phe Gln Gly Leu  
1220 1225 1230

Val Pro Gly Arg Lys Tyr Val Leu Trp Val Val Thr His Ser Gly Asp  
1235 1240 1245

Leu Ser Asn Lys Val Thr Ala Glu Ser Arg Thr Ala Pro Ser Pro Pro  
1250 1255 1260

Ser Leu Met Ser Phe Ala Asp Ile Ala Asn Thr Ser Leu Ala Ile Thr  
1265 1270 1275 1280

Trp Lys Gly Pro Pro Asp Trp Thr Asp Tyr Asn Asp Phe Glu Leu Gln  
 1285 1290 1295

Trp Leu Pro Arg Asp Ala Leu Thr Val Phe Asn Pro Tyr Asn Asn Arg  
 1300 1305 1310

Lys Ser Glu Gly Arg Ile Val Tyr Gly Leu Arg Pro Gly Arg Ser Tyr  
 1315 1320 1325

Gln Phe Asn Val Lys Thr Val Ser Gly Asp Ser Trp Lys Thr Tyr Ser  
 1330 1335 1340

Lys Pro Ile Phe Gly Ser Val Arg Thr Lys Pro Asp Lys Ile Gln Asn  
 1345 1350 1355 1360

Leu His Cys Arg Pro Gln Asn Ser Thr Ala Ile Ala Cys Ser Trp Ile  
 1365 1370 1375

Pro Pro Asp Ser Asp Phe Asp Gly Tyr Ser Ile Glu Cys Arg Lys Met  
 1380 1385 1390

Asp Thr Gln Glu Val Glu Phe Ser Arg Lys Leu Glu Lys Glu Lys Ser  
 1395 1400 1405

Leu Leu Asn Ile Met Met Leu Val Pro His Lys Arg Tyr Leu Val Ser  
 1410 1415 1420

Ile Lys Val Gln Ser Ala Gly Met Thr Ser Glu Val Val Glu Asp Ser  
 1425 1430 1435 1440

Thr Ile Thr Met Ile Asp Arg Pro Pro Pro Pro His Ile Arg  
 1445 1450 1455

Val Asn Glu Lys Asp Val Leu Ile Ser Lys Ser Ser Ile Asn Phe Thr  
 1460 1465 1470

Val Asn Cys Ser Trp Phe Ser Asp Thr Asn Gly Ala Val Lys Tyr Phe  
 1475 1480 1485

Thr Val Val Val Arg Glu Ala Asp Gly Ser Asp Glu Leu Lys Pro Glu  
 1490 1495 1500

Gln Gln His Pro Leu Pro Ser Tyr Leu Glu Tyr Arg His Asn Ala Ser  
 1505 1510 1515 1520

Ile Arg Val Tyr Gln Thr Asn Tyr Phe Ala Ser Lys Cys Ala Glu Asn  
 1525 1530 1535

Pro Asn Ser Asn Ser Lys Ser Phe Asn Ile Lys Leu Gly Ala Glu Met  
 1540 1545 1550

Glu Ser Leu Gly Gly Lys Cys Asp Pro Thr Gln Gln Lys Phe Cys Asp  
 1555 1560 1565

Gly Pro Leu Lys Pro His Thr Ala Tyr Arg Ile Ser Ile Arg Ala Phe  
 1570 1575 1580

Thr Gln Leu Phe Asp Glu Asp Leu Lys Glu Phe Thr Lys Pro Leu Tyr  
 1585 1590 1595 1600

Ser Asp Thr Phe Phe Ser Leu Pro Ile Thr Thr Glu Ser Glu Pro Leu  
 1605 1610 1615  
 Phe Gly Ala Ile Glu Gly Val Ser Ala Gly Leu Phe Leu Ile Gly Met  
 1620 1625 1630  
 Leu Val Ala Val Val Ala Leu Leu Ile Cys Arg Gln Lys Val Ser His  
 1635 1640 1645  
 Gly Arg Glu Arg Pro Ser Ala Arg Leu Ser Ile Arg Arg Asp Arg Pro  
 1650 1655 1660  
 Leu Ser Val His Leu Asn Leu Gly Gln Lys Gly Asn Arg Lys Thr Ser  
 1665 1670 1675 1680  
 Cys Pro Ile Lys Ile Asn Gln Phe Glu Gly His Phe Met Lys Leu Gln  
 1685 1690 1695  
 Ala Asp Ser Asn Tyr Leu Leu Ser Lys Glu Tyr Glu Glu Leu Lys Asp  
 1700 1705 1710  
 Val Gly Arg Asn Gln Ser Cys Asp Ile Ala Leu Leu Pro Glu Asn Arg  
 1715 1720 1725  
 Gly Lys Asn Arg Tyr Asn Asn Ile Leu Pro Tyr Asp Ala Thr Arg Val  
 1730 1735 1740  
 Lys Leu Ser Asn Val Asp Asp Pro Cys Ser Asp Tyr Ile Asn Ala  
 1745 1750 1755 1760  
 Ser Tyr Ile Pro Gly Asn Asn Phe Arg Arg Glu Tyr Ile Val Thr Gln  
 1765 1770 1775  
 Gly Pro Leu Pro Gly Thr Lys Asp Asp Phe Trp Lys Met Val Trp Glu  
 1780 1785 1790  
 Gln Asn Val His Asn Ile Val Met Val Thr Gln Cys Val Glu Lys Gly  
 1795 1800 1805  
 Arg Val Lys Cys Asp His Tyr Trp Pro Ala Asp Gln Asp Ser Leu Tyr  
 1810 1815 1820  
 Tyr Gly Asp Leu Ile Leu Gln Met Leu Ser Glu Ser Val Leu Pro Glu  
 1825 1830 1835 1840  
 Trp Thr Ile Arg Glu Phe Lys Ile Cys Gly Glu Glu Gln Leu Asp Ala  
 1845 1850 1855  
 His Arg Leu Ile Arg His Phe His Tyr Thr Val Trp Pro Asp His Gly  
 1860 1865 1870  
 Val Pro Glu Thr Thr Gln Ser Leu Ile Gln Phe Val Arg Thr Val Arg  
 1875 1880 1885  
 Asp Tyr Ile Asn Arg Ser Pro Gly Ala Gly Pro Thr Val Val His Cys  
 1890 1895 1900  
 Ser Ala Gly Val Gly Arg Thr Gly Thr Phe Ile Ala Leu Asp Arg Ile

1905

1910

1915

1920

Leu Gln Gln Leu Asp Ser Lys Asp Ser Val Asp Ile Tyr Gly Ala Val  
 1925 1930 1935

His Asp Leu Arg Leu His Arg Val His Met Val Gln Thr Glu Cys Gln  
 1940 1945 1950

Tyr Val Tyr Leu His Gln Cys Val Arg Asp Val Leu Arg Ala Arg Lys  
 1955 1960 1965

Leu Arg Ser Glu Gln Glu Asn Pro Leu Phe Pro Ile Tyr Glu Asn Val  
 1970 1975 1980

Asn Pro Glu Tyr His Arg Asp Pro Val Tyr Ser Arg His  
 1985 1990 1995

&lt;210&gt; 55

&lt;211&gt; 453

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 55

Met Lys Leu Leu Val Ile Leu Leu Phe Ser Gly Leu Ile Thr Gly Phe  
 1 5 10 15

Arg Ser Asp Ser Ser Ser Leu Pro Pro Lys Leu Leu Leu Val Ser  
 20 25 30

Phe Asp Gly Phe Arg Ala Asp Tyr Leu Lys Asn Tyr Glu Phe Pro His  
 35 40 45

Leu Gln Asn Phe Ile Lys Glu Gly Val Leu Val Glu His Val Lys Asn  
 50 55 60

Val Phe Ile Thr Lys Thr Phe Pro Asn His Tyr Ser Ile Val Thr Gly  
 65 70 75 80

Leu Tyr Glu Glu Ser His Gly Ile Val Ala Asn Ser Met Tyr Asp Ala  
 85 90 95

Val Thr Lys Lys His Phe Ser Asp Ser Asn Asp Lys Asp Pro Phe Trp  
 100 105 110

Trp Asn Glu Ala Val Pro Ile Trp Val Thr Asn Gln Leu Gln Glu Asn  
 115 120 125

Arg Ser Ser Ala Ala Ala Met Trp Pro Gly Thr Asp Val Pro Ile His  
 130 135 140

Asp Thr Ile Ser Ser Tyr Phe Met Asn Tyr Asn Ser Ser Val Ser Phe  
 145 150 155 160

Glu Glu Arg Leu Asn Asn Ile Thr Met Trp Leu Asn Asn Ser Asn Pro  
 165 170 175

Pro Val Thr Phe Ala Thr Leu Tyr Trp Glu Glu Pro Asp Ala Ser Gly  
 180 185 190

His Lys Tyr Gly Pro Glu Asp Lys Glu Asn Met Ser Arg Val Leu Lys  
 195 200 205  
 Lys Ile Asp Asp Leu Ile Gly Asp Leu Val Gln Arg Leu Lys Met Leu  
 210 215 220  
 Gly Leu Trp Glu Asn Leu Asn Val Ile Ile Thr Ser Asp His Gly Met  
 225 230 235 240  
 Thr Gln Cys Ser Gln Asp Arg Leu Ile Asn Leu Asp Ser Cys Ile Asp  
 245 250 255  
 His Ser Tyr Tyr Thr Leu Ile Asp Leu Ser Pro Val Ala Ala Ile Leu  
 260 265 270  
 Pro Lys Ile Asn Arg Thr Glu Val Tyr Asn Lys Leu Lys Asn Cys Ser  
 275 280 285  
 Pro His Met Asn Val Tyr Leu Lys Glu Asp Ile Pro Asn Arg Phe Tyr  
 290 295 300  
 Tyr Gln His Asn Asp Arg Ile Gln Pro Ile Ile Leu Val Ala Asp Glu  
 305 310 315 320  
 Gly Trp Thr Ile Val Leu Asn Glu Ser Ser Gln Lys Leu Gly Asp His  
 325 330 335  
 Gly Tyr Asp Asn Ser Leu Pro Ser Met His Pro Phe Leu Ala Ala His  
 340 345 350  
 Gly Pro Ala Phe His Lys Gly Tyr Lys His Ser Thr Ile Asn Ile Val  
 355 360 365  
 Asp Ile Tyr Pro Met Met Cys His Ile Leu Gly Leu Lys Pro His Pro  
 370 375 380  
 Asn Asn Gly Thr Phe Gly His Thr Lys Cys Leu Leu Val Asp Gln Trp  
 385 390 395 400  
 Cys Ile Asn Leu Pro Glu Ala Ile Ala Ile Val Ile Gly Ser Leu Leu  
 405 410 415  
 Val Leu Thr Met Leu Thr Cys Leu Ile Ile Ile Met Gln Asn Arg Leu  
 420 425 430  
 Ser Val Pro Arg Pro Phe Ser Arg Leu Gln Leu Gln Glu Asp Asp Asp  
 435 440 445  
 Asp Pro Leu Ile Gly  
 450

<210> 56  
 <211> 537  
 <212> PRT  
 <213> Homo sapiens

<400> 56

Met Ser Lys Pro His Ser Glu Ala Gly Thr Ala Phe Ile Gln Thr Gln  
 1 5 10 15

Gln Leu His Ala Ala Met Ala Asp Thr Phe Leu Glu His Met Cys Arg  
 20 25 30

Leu Asp Ile Asp Ser Pro Pro Ile Thr Ala Arg Asn Thr Gly Ile Ile  
 35 40 45

Cys Thr Ile Gly Pro Ala Ser Arg Ser Val Glu Thr Leu Lys Glu Met  
 50 55 60

Ile Lys Ser Gly Met Asn Val Ala Arg Leu Asn Phe Ser His Gly Thr  
 65 70 75 80

His Glu Tyr His Ala Glu Thr Ile Lys Asn Val Arg Thr Ala Thr Glu  
 85 90 95

Ser Phe Ala Ser Asp Pro Ile Leu Tyr Arg Pro Val Ala Val Ala Leu  
 100 105 110

Asp Thr Lys Gly Pro Glu Ile Arg Thr Gly Leu Ile Lys Gly Ser Gly  
 115 120 125

Thr Ala Glu Val Glu Leu Lys Gly Ala Thr Leu Lys Ile Thr Leu  
 130 135 140

Asp Asn Ala Tyr Met Glu Lys Cys Asp Glu Asn Ile Leu Trp Leu Asp  
 145 150 155 160

Tyr Lys Asn Ile Cys Lys Val Val Glu Val Gly Ser Lys Ile Tyr Val  
 165 170 175

Asp Asp Gly Leu Ile Ser Leu Gln Val Lys Gln Lys Gly Ala Asp Phe  
 180 185 190

Leu Val Thr Glu Val Glu Asn Gly Gly Ser Leu Gly Ser Lys Lys Gly  
 195 200 205

Val Asn Leu Pro Gly Ala Ala Val Asp Leu Pro Ala Val Ser Glu Lys  
 210 215 220

Asp Ile Pro Gly Ser Glu Ser Leu Gly Val Glu Gln Asp Val Asp Met  
 225 230 235 240

Val Phe Ala Ser Phe His Pro Ala Lys Ala Ser Gly Cys Pro Met Glu  
 245 250 255

Ala Leu Gly Ala Val Leu Gly Arg Glu Gly Lys Arg Asn Ile Lys Ile  
 260 265 270

Ile Ser Lys Ile Glu Asn His Glu Gly Val Arg Arg Phe Asp Glu Ile  
 275 280 285

Leu Glu Ala Ser Asp Gly Ile Met Val Ala Arg Gly Asp Leu Gly Ile  
 290 295 300

Glu Ile Pro Ala Glu Lys Val Phe Leu Ala Gln Lys Met Met Ile Gly  
 305 310 315 320

Arg Cys Asn Pro Arg Thr Gly Lys Pro Val Ile Cys Ala Thr Gln Met  
325 330 335

Leu Glu Ser Ile Ile Lys Lys Pro Arg Pro Thr Arg Ala Glu Gly Ser  
340 345 350

Asp Val Ala Asn Ala Val Leu Asp Gly Ala Asp Cys Ile Met Leu Ser  
355 360 365

Gly Glu Thr Ala Lys Gly Asp Tyr Pro Leu Glu Ala Val Arg Met Gln  
370 375 380

His Leu Ile Ala Arg Glu Ala Glu Ala Ala Ile Tyr His Leu Gln Leu  
385 390 395 400

Phe Glu Glu Leu Arg Arg Leu Ala Pro Ile Thr Ser Asp Pro Thr Glu  
405 410 415

Ala Thr Ala Val Gly Ala Val Glu Ala Ser Phe Lys Cys Cys Ser Gly  
420 425 430

Ala Ile Ile Val Leu Thr Lys Ser Gly Arg Ser Ala His Gln Val Ala  
435 440 445

Arg Tyr Arg Pro Arg Ala Pro Ile Ile Ala Val Thr Arg Asn Pro Gln  
450 455 460

Thr Ala Arg Gln Ala His Leu Tyr Arg Gly Ile Phe Pro Val Leu Cys  
465 470 475 480

Lys Asp Pro Val Gln Glu Ala Trp Ala Glu Asp Val Asp Leu Arg Val  
485 490 495

Asn Phe Ala Met Asn Val Gly Lys Ala Arg Gly Phe Phe Lys Lys Gly  
500 505 510

Asp Val Val Ile Val Leu Thr Gly Trp Arg Pro Gly Ser Gly Phe Thr  
515 520 525

Asn Thr Met Arg Val Val Pro Val Pro  
530 535